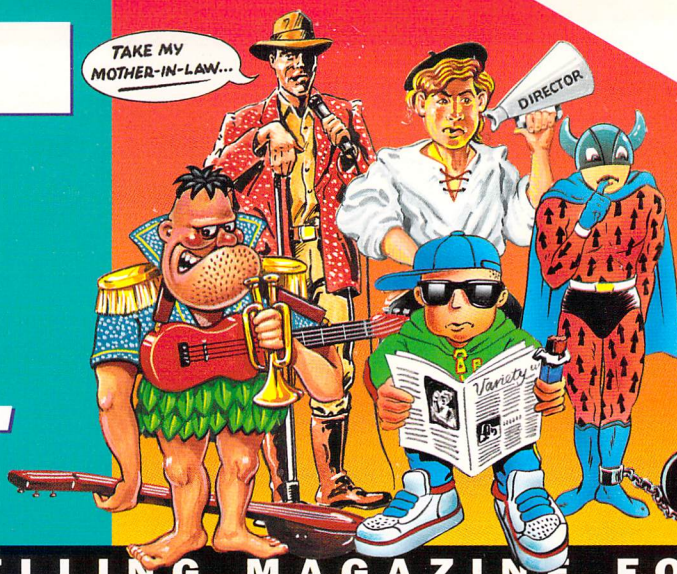


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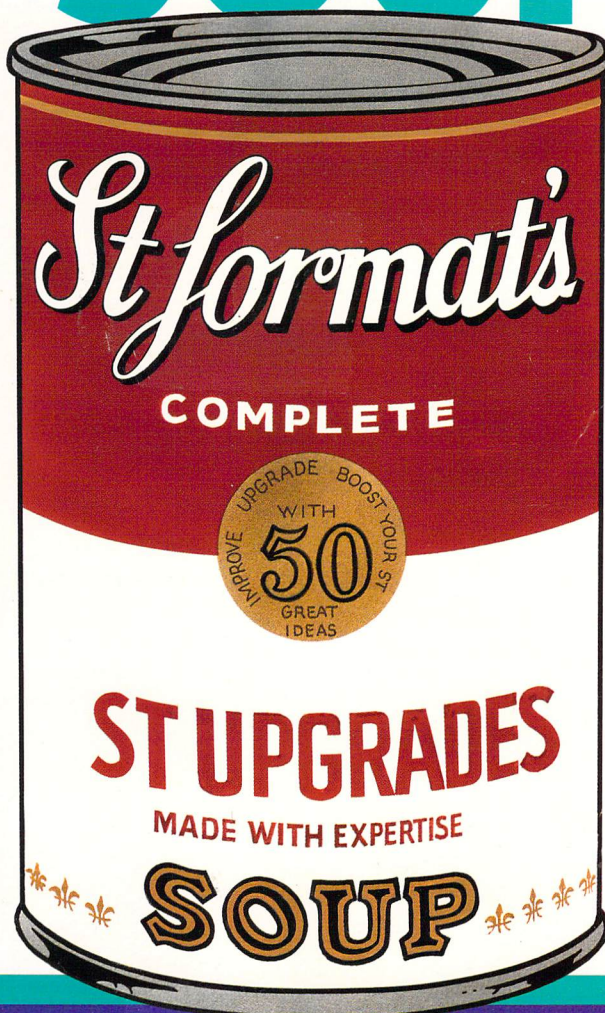
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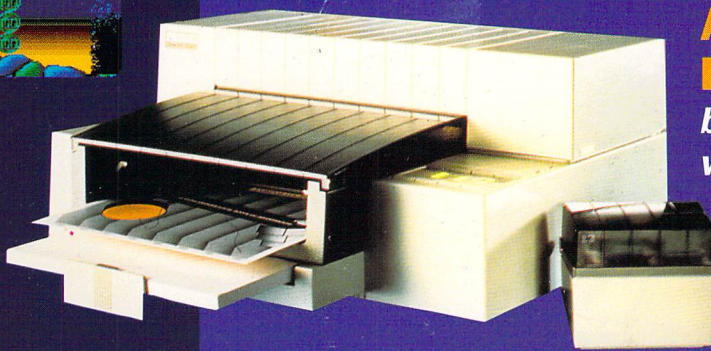
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A coyote in an aqualung stars in
this manic new platform game
from the Bitmaps

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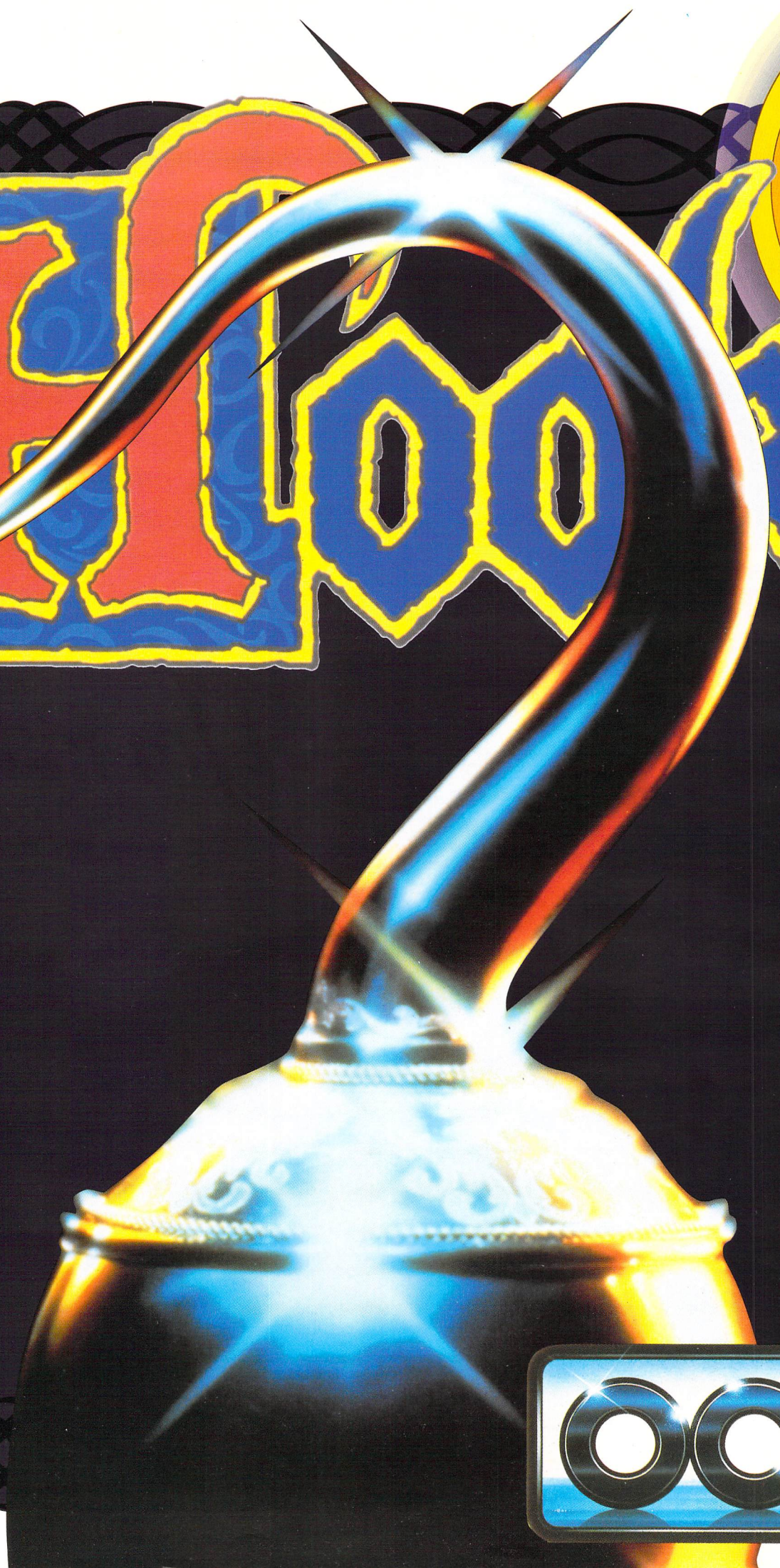
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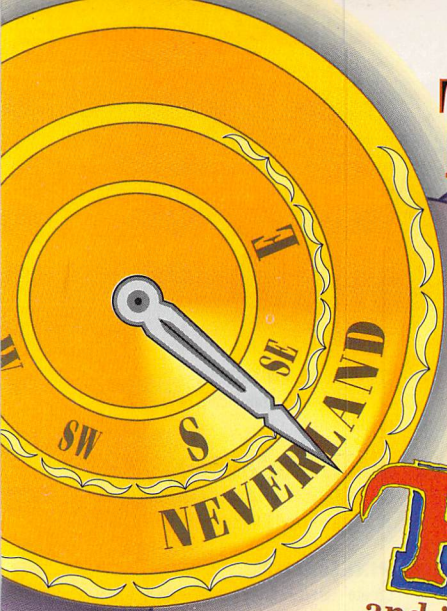


9 770957 485014

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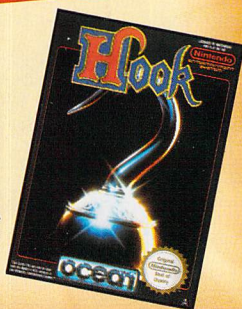


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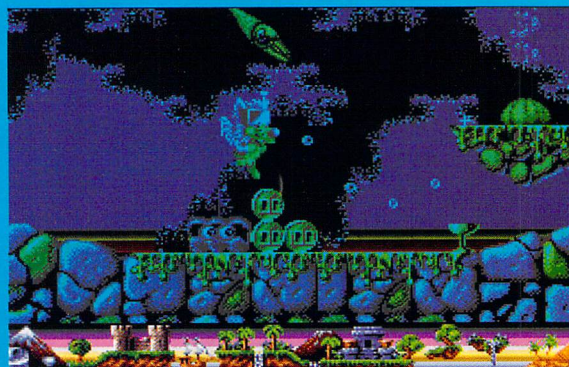
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SCREENPLAY

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THE GREAT STF COVER DISKS



COULD THIS BE THE BEST PLATFORM GAME EVER?

Find out for yourself with our complete playable
 preview level. Take control of a coyote with an
 aqualung and go racing through this *exclusive*
 level of *Fire and Ice*, written especially for STF.



GREAT IDEAS FOR UPGRADING YOUR ST

Inexpensive starters, serious main courses, fun desserts – all on the STF menu... page 30

● From the major to the minuscule, from RAM upgrades to replacement keytops – 50 ways to soup up your ST!

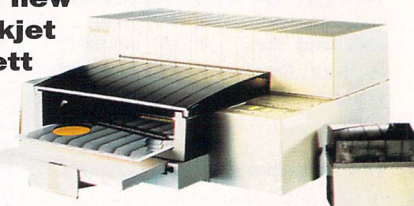
HEROES OR HAS-BEENS?

Heroes in hiding or simply over the hill? Turn to **page 100** to find out.



AN INKJET BARGAIN...

We put the new colour Deskjet from Hewlett Packard to the test... **page 107.**



HELLO, WORLD, THIS IS YOUR EDITOR SPEAKING

everything from replacement key tops to heavy duty processor accelerators and graphics cards. By the time you've

Welcome to this month's issue of *ST FORMAT*. This is possibly the most important ST magazine you've ever bought. This month's highspot is a feature on how you can boost the performance of your machine. We're looking at all the little hardware add-ons you can get for your ST –

finished with this month's issue you won't recognise your ST. Just to make absolutely certain you've got no excuse not to upgrade, we're also offering a special service to fit the upgrades for you and still keep your ST's warranty intact! See page 30 for the start of this amazing feature.

This month's issue also boasts another five pages of games tips and eight pages of ST Answers hints and advice. We're guaranteeing to answer every ST query, so if you've encountered any problem with your ST turn to page 52 and find out how you can solve it. Also on offer this month are reviews of all the latest games, hardware and software released for the ST. *Grand Prix* from Microprose is finally here for review (page 74) – how many months has it been? Plus, we've got our hands on Hewlett Packard's new

colour Deskjet laser printer and we put it through its paces on page 107.

Also inside this month's issue: a detailed look at what games heroes are up to now that their games are no longer at the top of the charts... Did you know, for example, that after the success of *Chuck Rock*, our mate Chuck went and joined a rock band and he's now on course to star in *Chuck Rock 2*? Just what you always wanted to know!

If this is the first time you've picked up the magazine, write to me and let me know what you think – I'm always interested in new ideas. Address your letters to The Editor, *ST FORMAT*, 30 Monmouth Street, Bath, Avon BA1 2BW.

Thanks for investing in this month's packed issue.

Mark Higham, Editor.

COMPLETELY YOURS!



B:14 -> Formula : B4-B6-B8-B10-B12

	A	B	C	D
1		Jan 92	Feb 92	Mar 92
2	Income	100.00	100.00	100.00
3	Magazines	9.50	9.50	9.50
4	Disks	12.50	22.35	14.00
5	CDs	22.00	0.00	0.00
6	Misc	20.00	5.00	7.50
7	Remainder	36.00		

This month's complete software is *K-Spread 2*, a Kuma program from Hisoft. It's a fully functional spreadsheet program, enabling you to examine and process any kind of information. *K-Spread 2* provides you with every financial, mathematical and statistical function you'll ever need!

● This exclusive glimpse into the Editor's accounts reveals all – especially why he's looking so thin lately. Unfortunately, even *K-Spread 2* can't remind you to buy food.

AND THERE'S MORE...



● Coyotes don't chase roadrunners any more – check out for yourself what they do now!

Don't miss the wide range of goodies on this month's bulging Cover Disk:

- *Fire and Ice* – exclusive playable preview of the Bitmaps' new platform game
 - *Super Boot 7.4* – the latest version of this boot-up customiser – not available anywhere else!
 - *The Financier* – complete program to help you manage your money
- Plus: nine other essential programs to help you get more from your machine.

TURN THE PAGE NOW!



Cover Disk 36

Look out! It's that man again, and he's holding something in his hand. Quick, run away! Hang on a moment... it's a disk – yes, it's that marvelous *ST FORMAT* Cover Disk, packed full with so much magnificent software from hither and yon! Greet him enthusiastically with open arms! Rejoice! The man with the *STF* Disk is back! Chris Lloyd talks his way into the party yet again. (Yuck, it's still warm and sweaty...!)

Menu of the month

Fire and Ice – Brilliant complete level of the latest state-of-the-art platform romp from Renegade.

Page 6

The Financier – Exclusive release of this simple and powerful accounting package.

Page 8

Super Boot – The latest version of the boot utility to end all boot utilities.

Page 8

Cypher 2 – Keep those files safe from all eyes but your own.

Page 12

Raytrace utilities – Two picture convertors and a viewing program to help you get more out of GFA Raytrace.

Page 10

Re-Sync – Speed up that monitor with this sync switching wonder.

Page 12

Memory Set – Configure your RAM to suit with this utility.

Page 10

Fujiwatch – Add a touch of wackiness to your Desktop.

Page 9

GFA Chaos listings – Mathematical mayhem in GFA Basic.

Page 7

● See part two of *STF's* fractal programming series on page 118.

GFA Listings – More GFA problems washed out of your hair.

Page 12

● For details, see *GFA Programmers' Surgery*, page 62.

MenuMaker – This simple menu driven utility creates menus.

Page 9

Back-up – Indispensable proggy chases backup blues away.

Page 7

Fire and Ice



● *Fire and Ice* has some dazzling colourful graphics and fiendish gameplay to match. Lucky *STE* owners get the advantage of a full 4,096-colour palette too. You've got seven days and nights to complete the level. That snowflake in the top right shows how long you have left. Also along the top is that ego-boosting score, to the right the number of lives left and finally any bonuses you've collected.



● Jump aboard the obliging turtle to get at those juicy bonuses near the top right of the level. He fires when you do, adding a bit of firepower – but be careful 'cos you fall off when he changes direction.

BY: RENEGADE

RESOLUTION: LOW ONLY

FOLDER: FIRE_ICE

FILES: DEMO.PRG

GET STARTED WITH: DEMO.PRG

When *fire and ice* meet you get – er, lukewarm water? You also get a splendid new platform venture from Renegade featuring that old friend, Cool Coyote. Well, he will become an old friend of yours because it's all wickedly addictive. Just open up the *FIRE_ICE* folder and double-click on *DEMO.PRG* to run it. The Disk features a complete land from one of the seven worlds Cool has to explore and blast his way through. Now's the time to brush up on the joystick skill and get wagging. You're looking for this

key to the next level and it's not just lying around. Its pieces have helpfully been distributed among the fishy monsters, so go get 'em. Joystick control is the startlingly logical left moves you left, right moves you right, and... well, you get the picture. Pressing <Fire> shoots these little bubble things which freeze the various beasts, turning them blue. You can now jump on them in safety and they melt into sparkly stuff. Contact with any unfrozen member of the fishy nasties looses you a life.

So, then: ready, steady, double-click and go! Last one to collect all six sections of the key has a face like a fish.

We'll be reviewing the complete *Fire and Ice* game in next month's *Screenplay* section

FOR FULL DETAILS OF THIS ISSUE'S INVALUABLE SECOND DISK,

EVERYTHING YOU REALLY NEED TO KNOW BEFORE YOU BEGIN

Protect it or regret it

To keep your *STF* Cover Disk absolutely safe, keep it write-protected by moving the little black tab so you can see through the hole. Nothing can now be written to your Disk, so there's no chance of you accidentally writing over or deleting any precious data. This also keeps your Disk completely safe from viruses. The Disk is guaranteed virus-free, so don't take any chances.

Read me! Read me!

Space on the Cover Disk pages is limited, so you may often find text files on the Disk with more information. These have the file extension DOC – the three

letters after the full stop. It's always a good idea to read these for more information on the program. Just double-click on them and select Show to display the text on-screen. If you find that half the text disappears off the right-hand side of the screen when you try to read a DOC file in low resolution, then change to medium resolution and try again.

Back it up – the easy way!

To keep your valuable *ST FORMAT* Cover Disk safe you should back up the disk, so if anything should go horribly wrong you've still got the original.

Because we use a special disk for-

mat to squeeze even more goodies onto the Disk, you can't do a direct disk to disk copy – you can't just drag the Floppy Drive A icon over the Floppy Drive B icon. But fear not: we've made life easy for you with a specially-commissioned backup program. Just follow the instructions below and you can't go wrong! Now there's no need to risk damaging the data on your original Cover Disk or losing it ever again!

● **Note** that some programs are compressed to fit on the Disk and cannot be run directly from it. Follow the instructions for each program in these Cover Disk pages and everything is sure to come up roses.

Still single after all these years?

ST FORMAT is now using a double-sided disk format. If you are one of the few *ST* owners still with a single-sided internal drive and no external drive, then you're out of luck – you can't read *STF* Cover Disks, or, for that matter, virtually any current software. This is because single-sided drives are now obsolete, and it is well worth upgrading. Replacement drives are cheap – as little as £35 – and easy to fit. At a stroke you can double the storage capacity of your disks. We brought you a detailed guide to fitting new internal drives in *STF* 32 – turn to page 64 to order it if you missed it.



● Not all the indigenous life is completely hostile. Cool Coyote can ride these big bubbles from the anemones for a free vertical ride. What's that on the right? Very fishy.



● The gateway to the next level – except there isn't one in this special preview. You still need to collect all six sections of the key to complete this level though. One of each type of creature holds a section, selected at random at the start of the game.



● It's the dreaded – er, monster thing. There are some most weird fishy creations lurking in the depths. Look out for ice cubes with little question marks on 'em – blast these to collect those power-ups. Then try holding down the <Fire> button to test 'em out.

Cover Disk Back-Up

BY: BRIAN TILLEY

RESOLUTION: ALL RESOLUTIONS

FOLDER: BACK_UP

FILES: BACK_UP.TOS,

BACK_UP.DOC

READ: BACK_UP.DOC

GET STARTED WITH: BACK_UP.TOS

Back up your ever-so-valuable *STF* Cover Disk right now. It could save endless hassles if by some more horrible than average quirk of fate things get wiped. Doing it the old way – dragging folders to drive B and swapping disks – is too much of a bother, so here's a clever little utility that does the whole business for you. Now before you do anything, write-protect your original Cover Disk – move the little black tab so you can see through the hole. This stops anything nasty happening, because nothing can be written to it. Now get a new disk ready – it doesn't have to be formatted (*Back-Up* does that for

you), but ensure you don't mind losing all the data on it. Then double-click on BACK_UP.TOS to run *Back-Up*. From the menu press <1> and off you go, swapping disks when prompted.

To minimise disk swaps, *Back-Up* uses all your *ST*'s available memory. If you have over 1MByte of RAM you can do everything with one disk swap. The source disk is the disk you are making the copy of – the Cover Disk. The destination disk is the intended back-up disk. If you have two drives, drive A is the source and drive B the destination.

You can also use *Back-Up* to back up other disks. To see if this is possible with a disk, load the program, press <2>, and when prompted, insert the disk you want to copy. *Back-Up* tells you if it can do it. You can't copy commercial games – they use all sorts of tricks to stop you doing this. And copying them is illegal. Now there's no excuse for not backing up – it saves loads of trouble if you do ruin the disk.

GFA Chaos listings

BY: CONRAD BESSANT

RESOLUTION: LOW OR HIGH

FOLDER: CHAOS

FILES: LIST1_HI.GFA,

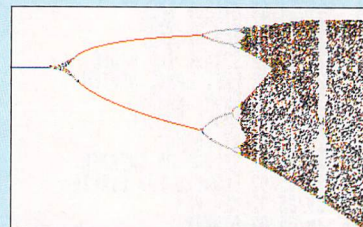
LIST1_LO.GFA, LIST2_HI.GFA,

LIST2_LO.GFA

TO GET STARTED: SEE BELOW

Nestled within the pages of last month's most hallowed *ST FORMAT* was a feature introducing the world of fractal programming. This month you get even more and it's even more fractally. To go with this month's session are these GFA Basic listings. You need GFA Basic 3.5 to load them into. Now where are you going to find a copy of that, eh? How

about the on the front of issue 35? Turn to page 118 for the latest instalment of fractalness and page 64 if you missed last month's megamongous *STF*.



● Look, Mum – a Feigenbaum diagram. It shows – er, Feigenbaum or something. We are reliably informed that it is in fact dead clever, so there.

SEE PAGE 16. NEXT ISSUE: STILL MORE COMPLETE SOFTWARE!

BY: GORDON MOORE

RESOLUTION: ALL RESOLUTIONS

FOLDER: SBOOT7_4

FILES: README.DOC, START-GEM.DOC, SUPERBT.DOC, STARTGEM.PRG, SUPERBT.PRG, SUPERBTA.PRG, SUPER_CS.PRG, SUPER_CS.RSC, SBCNV7_0.TOS, SBCNV7_2.TOS

READ: README.DOC, START-GEM.DOC, SUPERBT.DOC

TO GET STARTED: SEE BELOW

When your little grey friend is first switched on it takes a look at the disk in your internal drive, or if you have an auto-booting hard disk it takes a look there. If it finds a folder called AUTO

Super Boot 7.4

then it runs any .PRG programs contained in that folder. Having done that, it looks for Desk Accessories and loads these. Then it gets ready to send you to the Desktop. All very fine, but you can only load six Desk Accessories at once, and you probably have a range of programs you want in your AUTO folder at different times. What you need is a marvellous and powerful utility to customise the process and add a few bells and whistles.

Super Boot is a marvellous and powerful utility that does everything you could possibly want at boot-up time. You can choose which Desk Accessories and AUTO programs to load;

pick ASSIGN.SYS files for GDOS, so you can set which fonts and which printer you want to use; and choose which DESKTOP.INF files to use, setting up your icons, windows and resolution. It can even display a picture and play a sample for you. It leaves similar utilities standing at the starting gate. Although it's a doddle to use when set up, it can get a bit confusing when setting it up.

There's a massive instruction manual on the Disk called SUPERBT.DOC – have a good read before embarking on the customising process. If you have an older version of Super Boot, then you can use the two conversion programs to update your old SUPERBT.STF files.

HOW TO CONSTRUCT THE PERFECT BOOT

Customising Super Boot is made simple with the spiffing construction kit program SUPER_CS.PRG. Before you start all that, though, sort out an AUTO folder. Programs in the AUTO folder are run in the order they are copied into the folder, and it's important that Super Boot gets run first. The easiest way to do this is to create a new

AUTO folder on your boot disk and copy SUPERBT.PRG into it. Now copy across all the programs you might ever want to run from the AUTO folder – bung the lot in because Super Boot does the job of selecting the ones you need for each session.

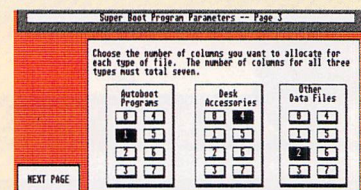
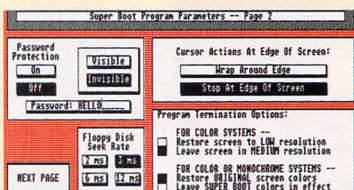
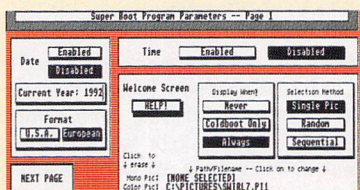
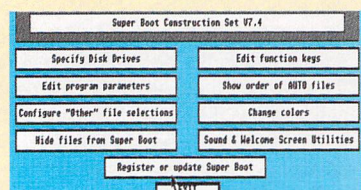
If you have a TOS version less than 1.4 then copy the file STARTGEM.PRG into

your AUTO folder as well. This enables you to autorun a GEM program. (GEM: Graphic Environment Manager – it's your ST's system of windows, menus and dialog boxes.) Last of all, copy SUPERBTA.PRG into your AUTO folder. This is an auxiliary program which stops programs which cause a reboot from running Super Boot again.

To get going you need SUPERBT.PRG in your AUTO folder – that is, the folder on your boot disk that holds programs that are automatically run when you turn on your ST. It needs to be first too – the best way is to start a new AUTO folder and copy SUPERBT.PRG into it first. Now you're ready to run the Super Boot configuration program SUPER_CS.PRG and customise everything to your needs. Just follow the step-by-step guide below.

Setups can be assigned to the Function keys, so you could, for example, have one setup for word processing and another for graphics work and instantly recall each at the press of a key at boot-up. No self-respecting boot disk should be without this program – super indeed.

Collect all your Desk Accessories onto your boot disk. Set up the Desktop how you like it and Save Desktop from the Options menu. This creates a DESKTOP.INF file which holds all sorts of handy information on how things are set up when you switch on. Super Boot can select which DESKTOP.INF file you want to use. Just rename them with an appropriate name, still ending in INF, and put them in a folder called SUPERBT inside the AUTO folder. You can



1 The Super Boot construction kit enables you to fiddle endlessly with all the settings. Well, not actually endlessly – there is a limit. But what it can't do you probably don't want to do. Select Edit Program Parameters to configure the basic setup. Here goes...

2 Page one: Date and time. Do you want Super Boot to ask you to enter the date and time when you boot up? Set the format of data entry to USA or European. The welcome screen is a picture in any Neo, Degas Elite or Tiny format. Click on Help for more info.

3 Page two: Add a password if you want one. Select whether you want a wrap-around cursor and how you want to exit on colour systems, and whether to restore the default palette. Leave the drive seek rate at 3ms unless you have a 5.25 inch drive.

4 Page three: This screen sets the number of columns for each category of files that are on the main Super Boot screen. The total must add up to seven. If you don't need a category, all you have to do is set the columns to zero.

The Financier

BY: KEVIN MUNRO

RESOLUTION: HIGH AND MEDIUM

FOLDER: FINANCE

FILES: FINANCE.DEF, FINANCE.PRG, FINANCE.RSC, READ_ME.DOC, INSTRUCT.DOC and examples folder

READ: READ_ME.DOC, INSTRUCT.DOC

GET STARTED WITH: FINANCE.PRG

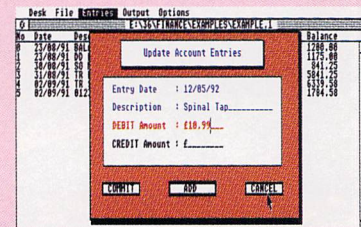
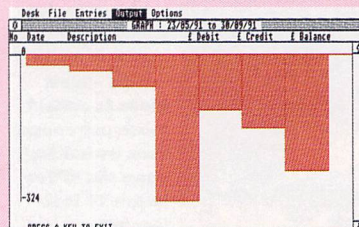
You sit down and do your accounts, right? You figure out how much wonga you have and how much you need to put by for all life's little living expenses, and you're left with spare cash you can spend on anything you like. The Financier should help sort things out a bit – keeping track of all your ins and outs and those plastic devils that we're persuaded are indispensable. Accounts can be customised, so you can add descriptions of

Desk File Entries Output Options					
UNTITLED					
No	Date	Description	£ Debit	£ Credit	£ Balance
0	27/05/92	WAGES		666.00	666.00
1	27/05/92	13TH FLOOR CD	12.99		653.01
2	27/05/92	GINGER BEER	13.24		639.77
3	27/05/92	RAM UPGRADE	99.95		539.82
4	27/05/92	SPINAL TAP VIDEO	10.99		528.83
5	28/05/92	FREE LANCE REVIEW		80.00	608.83
6	28/05/92	FROM GRAMMY		5.00	613.83
7	28/05/92	SMALL POODLE	23.99		589.84
8	28/05/92	ST FORMAT	3.95		585.89
9	29/05/92	REFUND ON SWEATER		25.95	611.84
10	29/05/92	FLOWERS FOR GIRLIE	15.00		596.84
11	29/05/92	NEW PEN	5.49		591.35
12	30/05/92	DINNER	28.00		563.35
13	30/05/92	SUBSCRIPTION	34.75		528.60

• The Financier is a complete home accounts program you can use to keep track of where all your well-earned sponduliks are disappearing to as well as produce pretty printed statements. You can spend your time fiddling around searching through entries and then change them all about to your heart's content. The program previously cost £12.50, but it's now Shareware – and a jolly good deal it is too.

• For the masochistic, there's the graph function. Financier is Shareware – for a £5.00 registration fee you get a well-produced manual and support. The address is in the DOC file.

• The data entry box. Use the cursor keys or the mouse to move around the fields. Pressing <Esc> clears an entry. Type in the description box to remind yourself what you threw your money at.

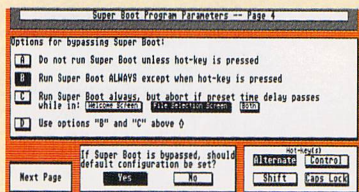




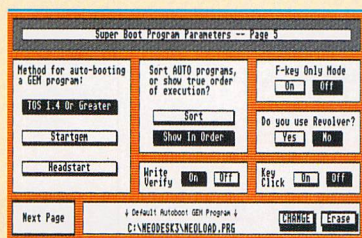
● This is the glorious range of options greeting you at boot-up time using *Super Boot*. You can pick and choose from a mass of programs and utilities. Use the cursor keys to choose the programs and the Spacebar to select or de-select them – the highlighted ones get run. When it's all set, press <Esc> and off you go.

do a similar trick with ASSIGN.SYS files for GDOS, as long as they keep the .SYS extension and are in the SUPERBT folder.

You can now run the construction kit and configure everything to your taste. First, it looks for the configuration file. You haven't got one yet, so it creates one for you. Select the boot drive and the search path for your Accessories and DESKTOP.INF files. If you are using a floppy, it's drive A; if it's a hard drive, it's probably drive C.



● Page four: Options for bypassing *Super Boot*. You might not want *Super Boot* to run when you boot up. You can either use a time-out or a hot-key – if you press it during boot-up it doesn't run. You can set up a default configuration using one of the Function keys.



● Page five: If you want a program to run automatically when you hit the Desktop, then you need to select the method. With the auto-booting program sorting, look at the order of the programs in your AUTO folder – it ensures everything runs in the right order. You can turn off the write verify function. This cuts writing to disk in half. With the F-key mode you can have *Super Boot* show all 30 pre-set configurations on-screen. You can turn off that irritating key-click and tell *Super Boot* if you're using the task-switching utility *Revolver*. Last comes the auto-booting GEM program. Programs like *NeoDesk* run when you exit from *Super Boot*.

KEYBOARD COMMANDS

- <Home> moves to top left corner
- <Shift> and <Home> moves to bottom right of screen
- Cursor Arrows – move the cursor around the screen. Hold down <Shift> to move it to the edge of the screen
- <Spacebar> selects or de-selects files
- <F> toggles between file selection and Function key screens
- <S> saves changes to Function keys
- <Help> shows help screen
- <Undo> exits without changes
- <Esc> exits with changes
- <Delete> de-selects all files
- Function keys – exit using the predefined configurations.

BELLS AND WHISTLES

That is far from all *Super Boot* can do. There's a whole host of goodies tucked up its sleeve. To learn all the tricks, inwardly digest the instructions on disk first. Er, no, not actually eat it – but have a good read of the text file SUPERBT.DOC.

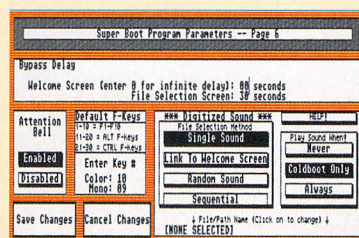
● Configure "Other" File Selections – Apart from selecting Desk Accessories, Desktop information and GDOS .SYS files, *Super Boot* can do the same tricks with any other files. A RAMdisk for example may use a DAT file to set its size – you could create a few of these with different sizes and pick which one you wanted.

● Hide Files – There are bound to be a few files you always want to run. To avoid accidentally deselecting them you can hide them from *Super Boot*.

● Edit Function Keys – You can define up to 30 preset configurations. Have things set up as you want with the press of a key.

● Colour Selection – You can set the particular colour scheme *Super Boot* uses to match your wallpaper.

● Sound and Welcome Utilities – Enables you to load in sounds and sort out which sample rate you need and save them with the correct filename.

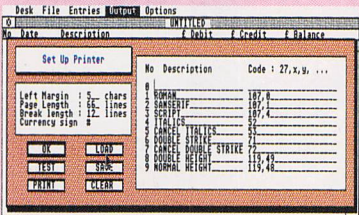


● Page six: nearly there now. If you set up the time delay bypass on page four here's where you set the time limit – and how long a welcome screen is displayed. You can have *Super Boot* beep at you when booting and define the default function key configuration. Another neat trick is the ability to play digitised sounds. The system is similar to the one for the welcome screen. You can have a sound taken at random from a folder full of them.

Right, having got through that lot click on Save Changes and you've managed to customise your version of *Super Boot*. Why not reset your ST and try it out!

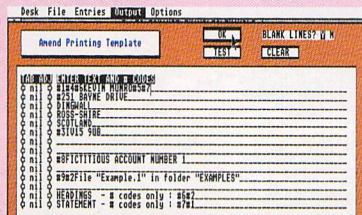
what you blew your last tenner on. Statements can be printed out using a definable template, data can be searched and you can whizz to any entry and check it out.

If you are using a colour monitor or TV, switch to medium res before you run FINANCE.PRG. *Financier* uses the ST menus to get at each function. Try selecting Load File from the File menu and loading in an example. All the financial goings-on appear in the main win-



● Setting up the printer can be great fun, honest it can. Just look at all those sexy printer codes that you can enter to customise your statement! Phoar, eh?

dow – debits, credits and the balance. Click on New Account to zap the example from memory and enter your own. With its excellent printer abilities and editing functions *Financier* should transform that unruly mass of paper and cheque stubs into a smart ST-controlled affair. Pop in all the details of the dosh you have to spend on food and stuff, and hey presto! You have a fiver left to spend on yourself. Read the instructions on the Disk called INSTRUCT.DOC.



● Statements can be personalised with the print template, adding in your own name and address at the top or whatever else you want to put in. Each account can have its own template.

Fujiwatch

BY: WIZWORKS !

RESOLUTION: ALL RESOLUTIONS

FOLDER: FUJWATCH

FILES: CONFUJ.PRG, FUJWATCH.PRG, FUJWATCH.DOC

READ: FUJWATCH.DOC

GET STARTED WITH:

FUJWATCH.PRG

A silly one, this, pointless and unproductive but it looks cute. See that Fuji symbol in the corner of your menu? You want that to rotate, don't you? Go on, admit it. Run FUJWATCH.PRG and your wish is granted. You can configure the program to set the speeds of rotation and ticking using CONFUJ.PRG with alert boxes after selecting which FUJWATCH.PRG to modify using the fileselector. Don't do this on the original Cover Disk though because it writes back to disk – use your backup. (Back-Up on the Disk makes it easy!) If for some reason you get sick of it you can turn it on and off by holding down <Control>, <left Shift> and <Alternate> together and pressing <right Shift>. Now there's frivolous for you.

MenuMaker

BY: MARK MATTS

RESOLUTION: ALL RESOLUTIONS

FOLDER: GFA

FILES: MENUMAKE.DOC, MENU-MAKE.PRG

READ: MENUMAKE.DOC

GET STARTED WITH:

MENUMAKE.PRG

In a pickle with your GFA Basic menus? Well, *MenuMaker* will sort it out. It's a menu-driven utility for creating menus. The result is saved as a LST file, which can be merged into your BASIC program. Instant customised menus! Double-click on a back-up copy of *MenuMaker* and hit the Options menu. Set up the menu by selecting Add New Menu Heading. Anything you add here becomes one of the menu headings you see along the top of the screen in your program. Select Add To Menu Heading to add entries to these menus and assign then procedures to call. Once it's set up, run a test, then use Save As Code to create a listing to load into your own proggy. See MENUMAKE.DOC for more info.

Memory Set

BY: MARK NIAS

RESOLUTION: ALL RESOLUTIONS

FOLDER: MEMSET

FILES: MEMSET.PRG,

MEMSET.DOC

READ: MEMSET.DOC

GET STARTED WITH: MEMSET.PRG

If you are programming a game or application or something on a 1MByte or more ST, you need to know if it'll run on a basic 512K ST. Otherwise you're going to lose a large part of your potential audience. If you don't have a friend with a 520 and don't fancy surgery, then you need a little utility like *Memory Set*, don't you? It's a smart beastie which fools your ST into thinking it has less memory than it actually has. It can also help out with a few of those games that don't like multi-megabyte machines too.

You can run MEMSET.PRG from the Desktop or else you can pop it into an AUTO folder on your boot disk – that's the one you have in your drive when you turn on your ST. Whatever you do, you get to see a little menu. Then you just hit the number representing the memory setup you require and your ST resets itself. If you've run *Memory Set* from an AUTO folder it pops up again – just press <C> or <W> if you want to install a "cold" or "warm" reset. A "cold" reset wipes everything, just like turning off your ST's power, while a "warm" one keeps the new memory setting.

One final word of warning – don't tell your ST it has more memory than it actually has. If you do that, it'll go utterly crazy and have to go off to a quiet house in the country to recover.

Memory setter © Mark Nias 1992
Version 3.2 16/03/92

```
Press...
1.....8512k
2.....1824k
3.....1536k
4.....2848k
5.....2560k
6.....3072k
7.....3584k
8.....4096k
C.....Install COLD reset (reset memory)
W.....Normal reset (Keep memory setting)
```

● *Memory Set* enables you to pull the wool over your ST's eyes and make it think it's got less memory than it actually has – dead handy for programmers who need to check how much memory a program needs to run. Just select the memory you want. Be quick, though, because it times out after a few seconds.

GFA RAYTRACE

Raytracing is a wizard mathematical method of producing stunning images on your ST. You define the world as a series of objects and lights, and your ST does some clever-clogs maths and renders the scene in 512 vibrant colours. Last month we brought you the king of the hill in raytracing programs, *GFA Raytrace* – the complete version, nothing taken out, whole, and what's more it's the unadulterated full release. If you missed this sexy number take a butcher's at page 64. This month for your delectation and delight we bring you three utility programs to help you get the most from this excellent program. ST graphics never looked so good!

Rayview

BY: NICK SMITH

RESOLUTION: LOW AND MEDIUM

FOLDER: RAYTRACE

FILES: RAYVIEW.DOC,

RAYVIEW4.PRG, RAYVIEW.OBJ

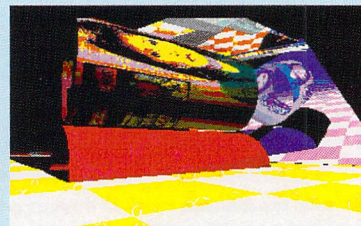
READ: RAYVIEW.DOC

GET STARTED WITH: RAYVIEW4.PRG

Rayview is a handy little job for viewing uncompressed colour GFA Raytrace pictures. You don't have to load up the complete package just to show off your

creations. You can run *Rayview* from low or medium resolution – it's not fussy. All you have to do is use the file-selector to pick any of the screens you want to gander at and press any of the keys if you want to quit looking or if you want to move on to another picture.

If stray dots happen to appear on the screen that aren't on the original picture, the chances are that the video chip isn't properly synced-in. Just try turning off your ST for a minute and switch on again.



● This piece of raytraced magic is by our Games Ed and he has imaginatively called it "Thingy." Apparently has "feeling" and "makes a comment." Looks like a mess, but that's art for you. With *Rayview* you can look at uncompressed GFA Raytrace pictures easily.

ST Raytrace Convert

BY: STARGATE 42

RESOLUTION: LOW ONLY

FOLDER: RAYTRACE

FILES: STVRAYCN.DOC,

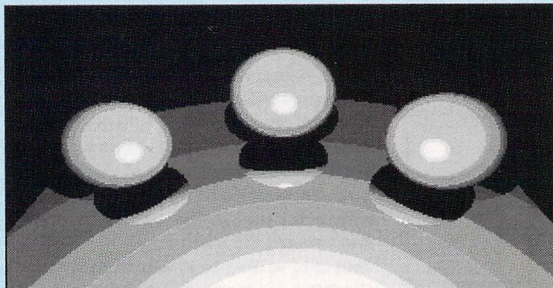
STVRAYCN.PRG

READ: STVRSYCN.PRG

GET STARTED WITH:

STVRAYCN.PRG

Having marvellous 512-colour raytraced pictures is all very well, but if you want to load them into an art package or use them in your games they're not very useful. You can load them into GFA Basic using the SHOW512.LST that comes with GFA Raytrace, but you're stuck with static screens. What you need is a convertor to change them into the more standard 16-colour Degas Elite pictures – these can be used with just about all-art programs, utilities and programming languages.



● Raytracing cliché number 7: three balls on a mirror. This is a raytraced image converted into greyscales with *ST Raytrace Convertor*, ready to be imported into STOS or an art package or whatever you fancy.

Obviously it's going to lose a lot in translation – 496 colours to be exact. *ST Raytrace Convert* does just that, taking uncompressed raytraced images and getting maths-like and transforming them into .PI1 Degas pictures.

There are three methods of conversion. The first is a straight conversion – this only works if the original raytraced picture has 16 colours or fewer – not very likely really. More useful is the

greyscale conversion, which can handle any image and produce the scene in shades of grey. You can then re-colour it with your favourite art proggy. The last method is an approximate conversion which scans the image looking for the 16 most popular colours and converting the image to use just these. Depending on the original this can produce fairly good results. You can now take your raytraced image anywhere!

Rayverter

BY: LONNY PURSELL

RESOLUTION: LOW AND MEDIUM

FOLDER: RAYTRACE

FILES: SUL2SPU.DOC,

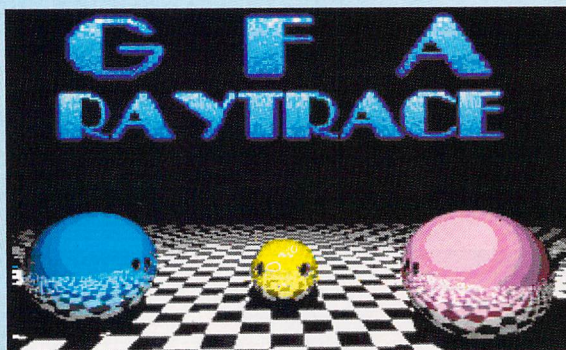
SUL2SPU.PRG

READ: SUL2SPU.DOC

GET STARTED WITH: SUL2SPU.PRG

GFA Raytrace produces pictures using the full STFM palette of 512 colours – glorious!

Unfortunately the file format is different from the "standard" 512 colour format produced by *Spectrum 512*. *Rayverter* converts Raytrace .SUL pictures into *Spectrum* .SPUs. You can now edit any glitches out of the image or add a few bits or generally improve



● *GFA Raytrace* can produce some of the best graphics going. With *Rayverter* you can change that elusive SUL file format into a more useful *Spectrum 512* SPU picture.

things. Now you don't have to fiddle endlessly with the settings and re-rendering scenes just to get rid of that last little hiccup. Just use the fileselector to pick your SUL picture and off you go. Conversion takes a few minutes and makes the screen look funny, but don't panic – kick back and wait. Press the

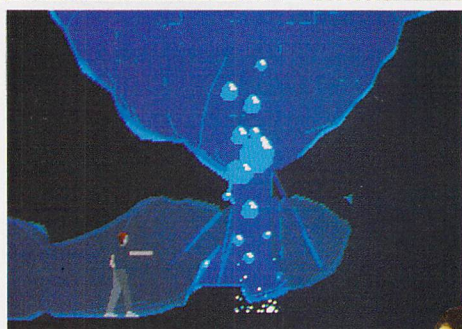
Spacebar after the line reaches the bottom of the screen and save your new screen.

One of the biggest hassles of *GFA Raytrace* has been the lack of pixel level editing, but with *Spectrum 512* and this converter you can now edit all you want – smart.

IT TOOK 6 DAYS TO CREATE THE EARTH

ANOTHER WORLD

ANOTHER WORLD
TOOK 2 YEARS



Screen shots are only intended to be illustrative of the gameplay and not the screen graphics which may vary considerably between formats in quality and appearance and are subject to the computer specifications.



Screen shots from Amiga formats.

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PROBLEMS? WHERE TO FIND HELP

1. MY STF COVER DISK WON'T LOAD!

Before anything else, check that you don't have a single-sided drive (one older than 1988, that can't format any disks to more than 360K) – they can't read new *ST FORMAT* Cover Disks. Single-sided drives are obsolete and it's well worth upgrading. Replacement drives are easy to fit and cost as little as £35. We covered fitting new internal drives in *STF 32* – turn to page 64 to order a copy if you missed it.

Drive okay, but still no joy? *ST FORMAT* duplicates hundreds of thousands of Disks every month. Inevitably a few are defective or damaged in some way – the Disk just won't load, or you can't open a window at all, or there's nothing in it, or the folder names are gobbledegook. It doesn't happen often, but if you're unlucky, sorry. You're guaranteed a free replacement if you return the Disk to:

ST FORMAT July Cover Disk Returns, TIB plc, 36-50 Adelaide Street, Bradford, Yorkshire BD5 0EA.

Enclose a sturdy self-addressed envelope (unstamped – we'll pay the postage) and a brief letter explaining the problem. TIB promise to replace your defective Disk within one week of receiving it. (If you're worried about trusting your precious Disk to the mails the Royal Mail's Recorded Delivery service costs only 30p on top of the normal postage.)

Please don't send your defective Disk to any other address – we have no stocks of Disks in Bath.

2. THIS COVER DISK PROGRAM DOESN'T LOAD!

If only part of your Disk won't load, TIB invite you to ring their Cover Disk Helpline and talk through your problem before you send back a perfectly good Disk. Telephone 0274 736990 during normal office hours and ask for Sam Hiah, *ST FORMAT* Cover Disk Helpline.

3. I CAN'T WORK OUT THIS COVER DISK PROGRAM!

Your Disk seems okay, everything loads, but you've got a problem with one of the programs. Make sure you've read all the relevant Cover Disk pages and any document files on the Disk. Try consulting your ST Owner's manual – that may have the information you need. Still got a problem? Then give us a ring on Wednesday afternoon. Telephone the *ST FORMAT* Cover Disk Hotline ☎ 0225 442244 on Wednesday 2 – 6 pm only.

We don't write the Cover Disk programs ourselves and don't know as much about them as the programmers, but we'll do our best to sort your problem out.

Please note that this line is for Cover Disk problems only. If you have any other queries, read on!

4. I HAVE A PROBLEM WITH THIS OTHER PROGRAM I'VE BOUGHT!

The best place to start is the distributor of the program. Most software houses run some kind of helpline service – check the bump that came with your software for the number.

5. I'VE STILL GOT AN ST PROBLEM!

If you've still got a problem – you suspect your machine may be faulty, or you're not sure about some procedure, or you need an answer to a more general query – then you have two options.

(a) Ring the official Atari Helpline ☎ 031 332 9323 on any weekday 8 am – 11 pm.

(b) Write to ST Answers using the Freepost coupon on page 62 – you don't even have to pay postage! – and let *ST FORMAT*'s team of experts tackle your problem in the pages of *STF*. We guarantee to reply to every query we receive as soon as space is available.

THE COVER DISK WANTS YOU

We need your software – games, utilities, demos – anything good, original and short. If you've written anything worthy of the *ST FORMAT* Cover Disk, send it with this form and full documentation to: Chris Lloyd, *ST FORMAT* Cover Disk Editor, 30 Monmouth St, Bath, Avon BA1 2BW. Then please be patient: we get heaps of submissions, and we try to give them all a fair testing!

Name

Address

Daytime phone

Program title Total size in K

On a separate sheet, explain concisely what the program does and what's great about it.

Remember to: ● Include on-disk and paper documentation ● Write your name and address on the disk ● Use a virus-free disk ● Keep a copy of your program, because contributions are non-returnable ● Enclose wads of cash. We pay for programs we use, but we need dosh for our hols.

Please sign the following declaration: This program is submitted for publication in *ST FORMAT*. It is wholly my own work and I hereby agree to indemnify Future Publishing against any legal action should copyright problems arise.

Signed

Re-Sync

BY: TONY HARRIS

RESOLUTION: LOW AND MEDIUM

FOLDER: SYNC

FILES: RE_SYNC.ACC,
RE_SYNC.DOC, RE_SYNC.PRG

READ: RE_SYNC.DOC

TO GET STARTED: SEE BELOW

How do you fancy ten extra Hz, then? The Hertz rate is the number of times a second the screen is redrawn, so the higher the value the better. A colour monitor hooked up to an ST can run at 50 or 60Hz. When you turn on your ST with a monitor or TV it's running at 50Hz. However, all monitors and most modern televisions can handle 60, so why not use it? The screen's bigger and things move that bit faster and smoother.

There are two versions of *Re-Sync* on the Cover Disk for switching speeds – a Desk Accessory version and an executable program designed to sit in your AUTO folder. The Desk Accessory,

called *RE_SYNC.ACC*, loads automatically if it's on the root directory of your boot disk – that is, not in any folders or anything. Unless you have a hard drive the boot disk is the disk in your ST's internal drive when you switch on. You can now change Hertz from the Desk menu.

The program version, called *RE_SYNC.PRG*, can be run from the Desktop like any normal program – or even better, it can be placed in an AUTO folder on your boot disk. This is simply a folder called AUTO on the root directory of your boot disk. You can now choose the Hertz rate whenever you switch on. A simple way to squeeze a bit of extra performance out of your ST without opening the case – can't be bad, can it?

If your screen looks a total mess when you try to switch up to 60Hz, it means you're using a TV or TV-monitor that isn't capable of that speed. Just hit the Spacebar to switch back to 50Hz and you can then remove *Re-Sync*.

Cypher 2

BY: PATRICK MALLOWS

RESOLUTION: ALL RESOLUTIONS

FOLDER: CYPHERII

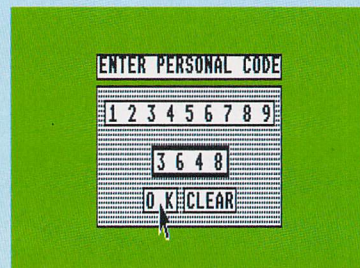
FILES: README.DOC,
CYPHERII.PRG

READ: README.DOC

GET STARTED WITH: CYPHERII.PRG

Do gremlins come in the night and fiddle with your precious files? Or maybe someone closer to home takes a browse through your source code? How about this one, then: it scrambles the file and encodes a password into the file so only you can get at them. You could leave anything you wanted on a hard drive, safe in the knowledge that only you can get at it. Just run *Cypher*, select Encode and use the fileselector to pick a file to encode, then whack in the password. Now it's safe from all but you. To get the original file back select Decode File and enter the same

password. One word of warning, though: don't encode the only copy you have of any precious data – just in case things go horribly wrong. Probably best to write down the password somewhere, too.



● The all-important password code box. *Cypher* scrambles files and only users who have the correct code can unscramble them, so try not to encode the only copy you have and then forget the code. It might make you just a teeny bit slightly oh-such-a-bit angry, most likely.

GFA listings

BY: BARRIE CAPEL

FOLDER: GFA

FILES: KEYS.GFA, SWITCH.GFA

TO GET STARTED: SEE BELOW

We're a helpful lot here at *STF* – not only did we give you the complete version of *GFA Basic 3.5* last month – the very latest version of the super-duper dead fast and powerful BASIC programming language – but we also do our damndest to answer those awkward

GFA Basic questions in our megatipastic ST Answers section. Turn to page 62 for this issue's tips.

This month's thrilling instalment features these two little bits of code that sort out switching between medium and low resolution and reading all those weird keyboard keys. Make sure that you use these listings with *GFA Basic 3.5* – they won't work with any older versions. Files are now saved as .GFA rather than .LST. Trip along to page 62 and read all about it.

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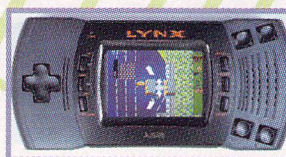
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MENU MADNESS

All of *K-Spread*'s functions are available from the main screen. Access them either by clicking on an icon or from the menu bar. Once you've learned the ropes, you can use the keyboard shortcuts. Here's the lowdown on those menus

FILE MENU

Load - Loads in a spreadsheet file from disk. Files have the file extension .SPD. Just click on one of these, and then on the OK button.

Save - Saves a spreadsheet file. You are first asked the range of cells you wish to save. The default values are the maximum size of the spreadsheet.

Save as - Same as "Save" but this enables you to use a different filename to save - preserving the untouched original.

Merge - This merges a file with the current spreadsheet. The Range function is used to set where the top left cell of the new data goes.

Give and Take - Saves or loads data in

the DIF format - Data Interchange Format - ready to be imported or exported into other Kuma programs.

Load and Save Macros - Deals with the MAC files of defined macros.

Disk Print - Sends the spreadsheet to disk in pure ASCII format - that is, pure text. Use the Range option to define the area to be saved. The file could then be loaded into a word processor or similar.

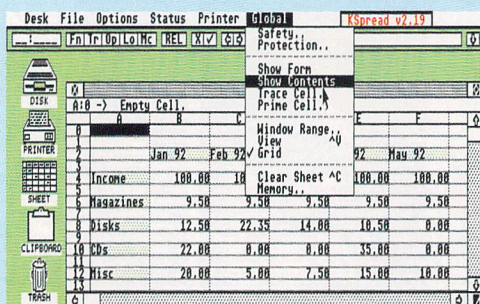
Delete - Zaps a file from disk - use with caution!

Quit - Throws you out of the program.

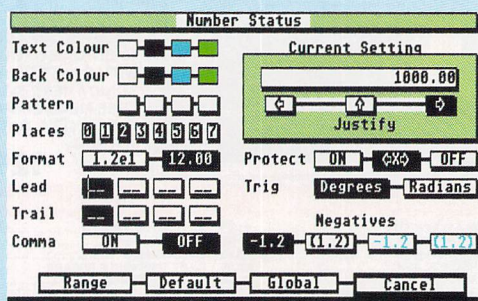


K-Spread 2

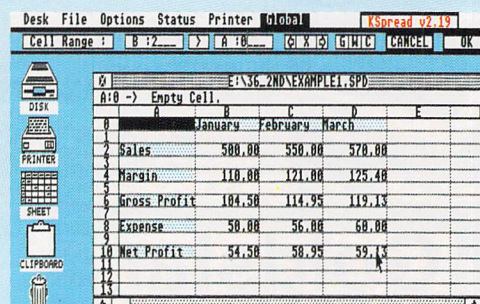
You can write without a word processor or draw without an art program, but a spreadsheet is a new world of ST power. Chris Lloyd and Clive Parker tell all about *K-Spread 2*



● *K-Spread 2* has a wealth of meaty functions just a mouse click away. The main spreadsheet window operates just like a normal GEM window on your Desktop. Use the little arrows to scroll around it.



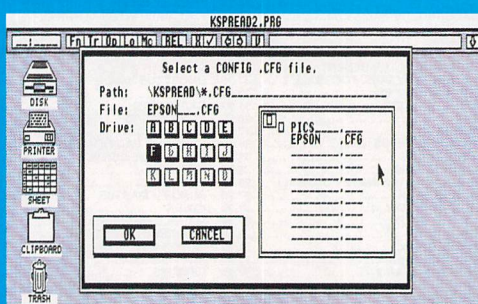
● *K-Spread* can display your data in a multitude of ways. The number status box enables you to set the exact format of output - everything from the screen colour to the trigonometric format.



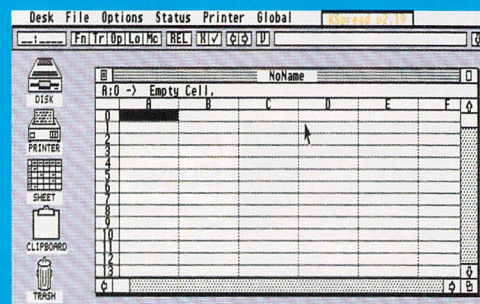
● Many functions in *K-Spread* require you to set the range of cells to be operated on. This brings up this bar just below the menu bar. You can enter the values from the keyboard or click directly on the spreadsheet window. Press <Return> or click on OK and off you go.

CREATING A SPREADSHEET WITH K-SPREAD 2

This is how you can create a simple expenses spreadsheet based on a monthly budget of £100.00 to spend on leisure and entertainment activities. The spreadsheet created here is included on the Disk for you to load in and examine - the filename is STF.SPD



1 When you open the program, you are presented with this dialog box asking you to select the correct printer driver. Here you can see the default EPSON.CFG supplied with the program. If you have a printer connected that isn't Epson-compatible, take a look at the box headed "Paper Power" on page 17 for what you need to do.



2 You are next presented with a GEM window with a grid inside. The grid is labelled with letters denoting the columns and numbers denoting the rows. Each small box in the grid is called a cell and is identified by its row and column number. The black cell is the current cell. Clicking the cursor on cell B:2 makes it the current cell and switches to Edit mode, enabling data to be entered into the Edit Box. Pressing <Undo> exits from the Edit mode.

THE OPTIONS MENU

Open – Gives you another window on the current spreadsheet. You can open up to five at once.

Hide – A cell or range of cells can be hidden from view, and you need a password to “un-hide” it. Several people can work on the same spreadsheet with different levels of access.

Recalc – Enables you to change the range and direction of calculation.

Find – You can find or find and replace a value or text string, searching

throughout the spreadsheet or a given range of cells.

Goto – Moves instantly to any cell in the spreadsheet. Just enter in the cell number.

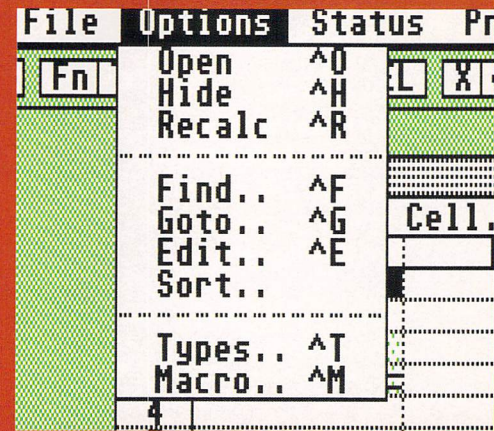
Edit – Puts you into edit mode, ready to mess with the cells.

Sort – Sorts rows or columns of text or numbers into ascending or descending order.

Types – Enables you to change data

types over a range of cells. Data, formula and text can be changed.

Macro – Formulates a macro – a user-defined formula. Enter a name and the number of parameters and click on New. Now enter the formula into a cell and press <Return>. The macro is then saved under the new name.



You need a spreadsheet. Maybe not right now, but you will. It's one of the most incredibly useful pieces of “serious” software you can have lurking in your disk-box. It can make heavy number-crunching sessions a breeze and it's one of the three cornerstones of business software, along with the database and the word processor – but you don't need to be in business to make use of one, any more than you need to be in business to find a use for a word processor.

Very simply, a spreadsheet is a grid of boxes called cells. Into each cell you can enter text, numbers or formulae. The formulae are the clever bits – they can refer to what's in other cells. For example,

you could set up a list of prices in a column and make the last cell hold the formula to work out the total of all the prices. Change one of the prices and your ST automatically works out a new total. Huge matrices of data can be instantly updated without resorting to a small lake of Tippex.

K-Spread has an enormous capacity – 256 columns by 8,192 rows – as well as a zillion functions for manipulating the cells. There are four data types: value, text, label and formula. Value is any number. Text is any character and plays no part in the calculations – you can use these for information. Labels are used for headings and may be used inside a formula as a part reference to a row or column.

There are two modes: edit and – er, not-in-edit-mode. The keys and mouse buttons behave differently depending on whether you're in edit mode or not. In edit mode the cursor appears in the edit box at the top right and the cursor keys refer to the edit box – the bar below the menu. When you're not in edit mode, the cursor keys move around the cells in the spreadsheet. Clicking on a cell with the mouse makes that cell the current one. Have a look at the lovingly compiled walk-through starting below to see how a spreadsheet is put together. There's far too much to this complex program to go into every detail here, but there's enough to get you going. The best way to learn is to experiment – so get experimenting!

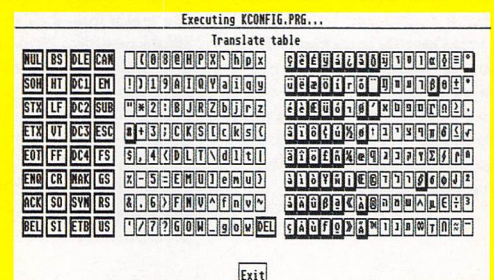
PAPER POWER – GETTING IT ALL OUT AND DOWN IN PRINT

There are loads of different types of printer – at least, er, a million. Well, definitely more than six. K-Spread comes with a printer driver to run Epson compatible printers, which should do for most of them. If it doesn't work or has problems, you need to create a new printer file. On the Disk is the program KCONFIG.PRG to create or edit the PRN printer drivers K-Spread uses. The program is all mouse driven and steps through the process.

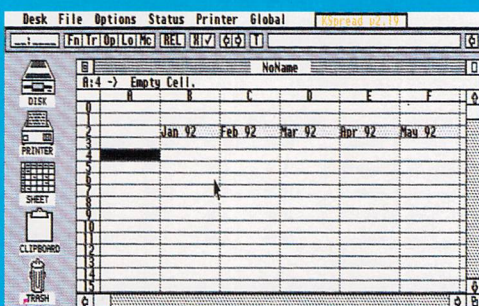
Click on Create New File to start from scratch or Load File to load in the supplied driver, and then Edit File to start delving. There are five boxes to work through. Name does just what you'd expect – it enables you to enter your printer's name for reference. Connections tells you ST if it's a serial or parallel printer. Nearly all ST printers are connected to the parallel port. Paper Settings enables you

to choose carriage return, line feed or both at the end of a line, as well as details on the paper – margins, length and type. Features enables you to enter printer code to access features such as enlarged or near letter quality printing. You need to consult your printer's manual to get the correct codes. The last section is the deadly Translation Table. Click on a character you wish to translate, and up pops a box into which you can enter your printer's code for that character. Looks a bit of a nightmare, but it isn't really. The default values should be fine for most things. The only way to really find out is to experiment.

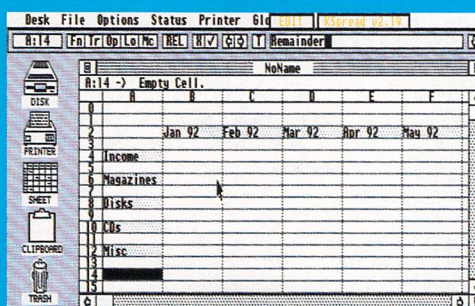
Having knocked up your new printer file, don't forget to save it. The default extender is PRN. If you want a printer driver loaded displayed when you load up K-Spread, then rename a PRN file to CFG.



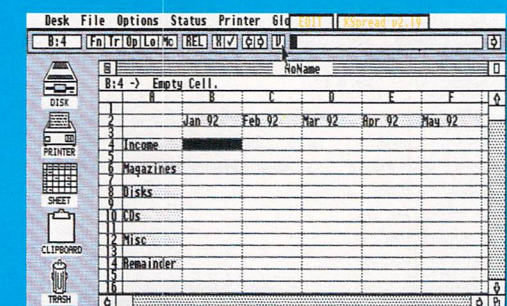
● That old favourite, the printer translation table. If you get characters mysteriously changing betwixt screen and printer, you can get it sorted from here.



3 Change the data type to text by clicking on the Data Type Box in the status bar or pressing <Tab> until a letter T appears. Click on the arrow in the Direction Indicator Box until the arrow points to the right. This means you get moved one space to the right after you press <Return>. Enter the month data “Jan '92” in cell B:2 and press <Return>. The data is now entered and C:2 becomes the current cell. Enter data in five boxes along the row from Jan '92 up to May '92, which ends up in cell F:2.



4 Change the direction arrow so that it points down by clicking on it. Click on cell A:4 and start entering your expense categories. You can leave a gap between each line to make the data easier to read. We have entered the headings Income, Magazines, Disks, CDs, Misc and Remainder. These can, of course, be any headings you wish. If you make a mistake, just use the <Backspace> key to delete characters.



5 Press <Undo> to exit from Edit mode and click on cell B:4. Move the cursor to the Data Type box and click on it until the letter changes to V for value – this means that numeric values can be entered into the cell. Click on the direction arrow until it points to the right. Enter the value 100 into each cell along the Income row – two decimal places are created by default, making the program ideal for monetary calculations.

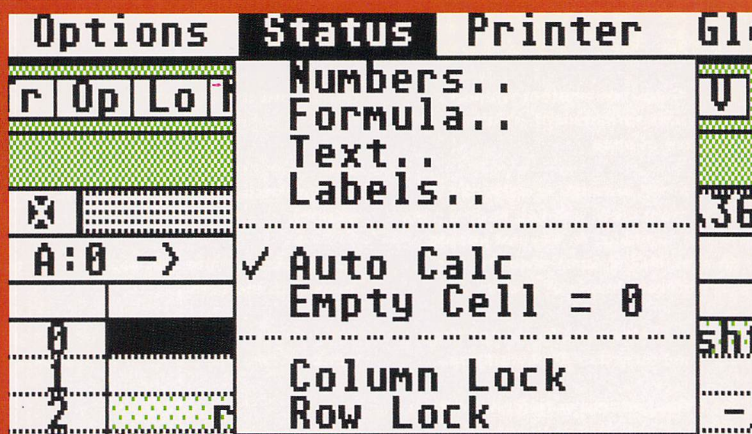
STATUS MENU

From the status menu you can change the format in which data appears on-screen for each of the four data types. You can fiddle with the colours, justification and format of the data.

Auto Calc – You can turn auto calc on and off. With it on, the sheet is recalculated every time data is entered into a cell, giving instant feedback on any changes. Turning it off speeds things up. A little tick next to the entry means it is activated.

Empty Cell=0 – Does what it says. Do you want empty cells to have a numerical value of zero?

Column and Row Lock – These lock a row or column in position, so it stays where it is regardless of the scrolling of the rest of the cells. First highlight a cell for the row or column you want to lock, then select the menu item. A little tick appears on the menu.

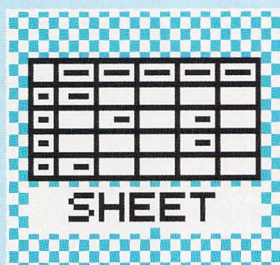


ICON DO A PUN HERE

To make everything just that bit easier to use, *K-Spread* has five icons down the left side of the screen which give you quick access to the more common functions



Disk Icon – Drag this to the spreadsheet icon to load a file. Doing this overwrites all the data already on the sheet, so make sure you've saved it if you want it. Drag the disk icon to the main window to merge a file in. The cell you drag the icon to becomes highlighted, and it becomes the top left-hand cell where the new data begins.



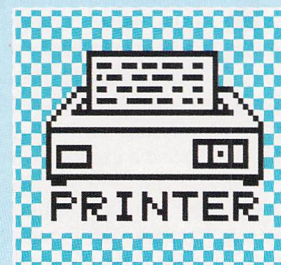
Spreadsheet Icon – Drag this to the disk icon to save the spreadsheet, or to the printer to print it out. Dragging it to the trash icon destroys a range of cells. Clicking on it once forces a recalculation over the recalc range set under the global menu. Double-clicking on the icon forces a recalculation of the entire sheet. Dragging a cell to the icon does a copy – you are prompted for the cell range.



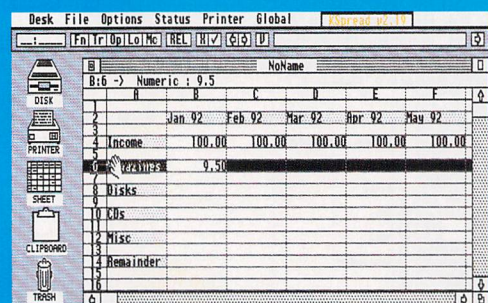
Clipboard Icon – Dragging a selected block to the clipboard is a way of storing data. It doesn't store the data itself, but is a reference to the range of cells. Dragging the clipboard icon to the spreadsheet window copies the block of cells referred to by the clipboard. Dragging the icon to the trash can deletes the top reference from the list. The clipboard can hold ten references to ranges of cells – clicking once on the icon shows you the list. Double-clicking on the icon enables you to edit the references using the Range function.



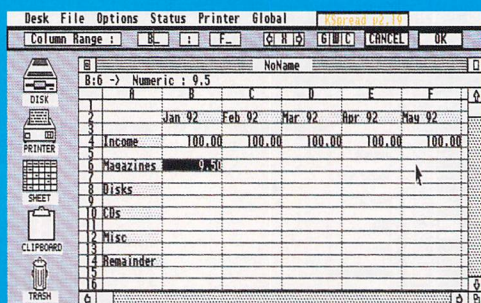
Trash Icon – Drag a block of cells here if you want to zap 'em. You can select a column or row by clicking on the header. You can also Hoover up the cells one cell at a time by clicking once on the trash icon. When you do this, the mouse pointer changes into a little Hoover to show you which cells are getting gulped.



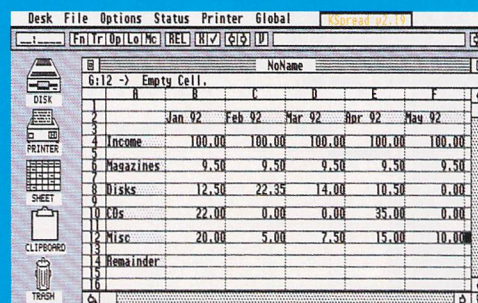
Printer Icon – Double-click here to configure your printer. You get the printer format dialog box, where you can set what characters are used for horizontal and vertical dividers (so you can accommodate what your particular printer is capable of printing) and set form feed, as well as toggle column and row headers and page break on and off. Dragging the spreadsheet icon to the printer icon starts the printout process.



6 Press <Undo> and then click on cell B:6. £9.50 has been entered in the cell to cover magazine costs. Assuming that the magazines are on a regular subscription, the same data can be copied to each cell along the magazine line. Press <Undo>, then click on cell B:6 and keep the button pressed. The cursor should change to an open hand and the cell become outlined. Keeping the button pressed, drag the box to the number 6 at the left-hand side of the row. When the row becomes highlighted, release the mouse button.



7 A new status bar appears at the top of the screen below the GEM menu bar. This is where you tell the program how many columns across the spreadsheet you wish the data to be copied to. Click on the cell with the original data to set the start cell and then on F:6 to define the end cell of the range, then click on the OK box. This copies all the data across all the columns.



8 Fill in the data for the rest of the values in the rows for Disks, CDs and Misc. These can be any values you wish – it doesn't really matter for the purposes of this demonstration. Click on the Data Type Box or press <Tab> until the letter displayed changes to an F. Now you can enter a formula.

PRINTER MENU

Set Format – Enables you to change the presentation of the printed spreadsheet – that is, alter the horizontal and vertical dividers, headings and so on.

Edit Config – Edits the relevant parts of the printer configuration file, the margins, lines page and so on.

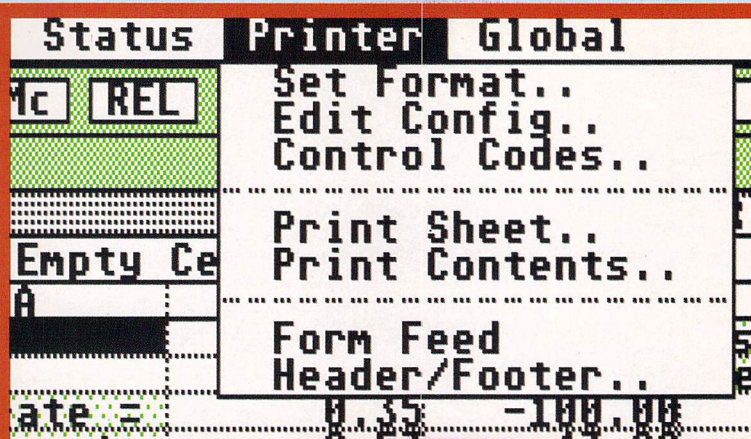
Control Codes – Sends control codes directly to the printer, such as under-line or double-strike.

Print Sheet – Sends your beautifully crafted sheet to the printer.

Print Contents – Prints the contents of a cell rather than the result. Selecting "formulae" gives you a printout of all the formulae used in a sheet.

Form Feed – Sends a form feed to your printer.

Header/Footer – Enables you to enter the header and footers used in the printout.



WHAT'S ON THE STATUS BAR

Directly beneath the GEM menu bar is a line of boxes called **Active Edit Boxes**. They show the status of various functions while you're in Edit mode. Clicking on any of these switches the program to Edit mode and pressing <Undo> exits Edit mode.

The Current Cell box: displays the current cell.

Fn **The Function box:** displays a list of functions in a drop-down menu, ranging from entry of the date and time to defining the width of a cell.

Tr **Trigonometric functions:** sets up formulae to calculate sines, cosines and other trig functions from this drop down menu.

Op **Mathematical operators:** select operators such as plus, minus and multiply from this menu.

Lo **Logical operators:** logical expressions can be selected here to be used in formulae.

Mc **Macros:** displays the currently defined macro names for selection.

Rel-Abs **Toggles** between relative and absolute modes for formulae.

X **The Undo box:** used to exit the Edit mode, this function can also be accessed by pressing <Undo>.

✓ **The Tick box:** the same function as entering <Return> or <Enter>.

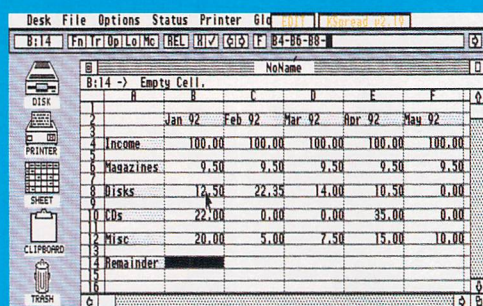
<> **The left and right edit arrows:** clicking on the left arrow is the same as pressing <Backspace>; the right arrow is the same as pressing <Delete>.

The Data Type box: clicking on this box sets one of four letters; V enables numeric values to be entered, F enables formulae to be entered, T enables text to be entered and L enables labels

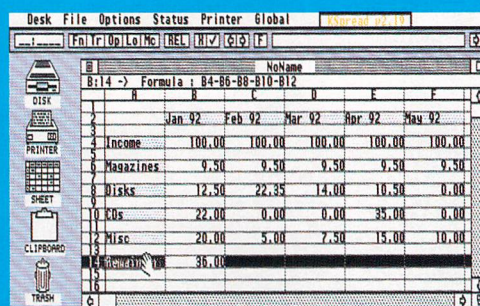
to be entered. Pressing <Tab> also changes modes.

The Edit box: this is where you enter data to be placed into a cell.

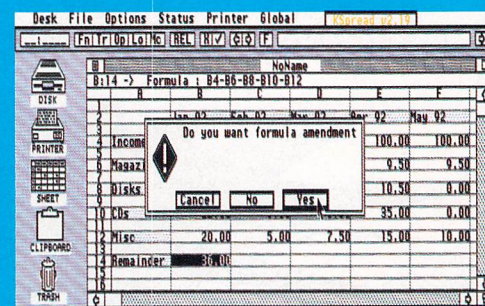
The direction indicator: the arrow shows in which direction the next current cell is to be after you press <Return>. Clicking on the arrow changes it. A cross in the box indicates that the current cell remains current after data entry. Using <Shift> and a cursor direction key also changes the current direction.



9 Press <Undo> to ensure you are not in Edit mode and click on cell B:14 on the Remainder row. You can enter a formula here to work out the balance left from the original £100.00 in January. Enter the formula $B4 - B6 - B8 - B10 - B12$ into the Data Entry box and press <Return>. This formula takes the value in cell B:4 and then deducts the value of each of the other cells named. Any mathematical symbol can be used in formulae and any cell in the spreadsheet can be used in an equation.



10 Instead of typing the formula in the remainder cell for each column, it can be copied as you would for numerical or text entries. Press <Undo> and click on cell B:14. Keeping the mouse button pressed, drag the box to the number 14 – indicating the row number – until the entire row becomes highlighted, then release the mouse button.



11 The column range status bar appears at the top of the screen. Click on cell B:14, then on cell F:14 and then on the OK box. A dialog box may appear saying that the cells overlap. If it does, click on OK. A dialog box appears asking if you wish the formula to be amended. Click on the Yes box. This ensures that the formula is altered so it becomes relevant to each column. If No is selected, the result of the January column is displayed across the spreadsheet.

GLOBAL MENU

Safety – With this you can tell the program to ask for confirmation of any cell deletions or overwrites. You can also disable the trace option.

Protection – Stops you from overwriting a range of cells.

Show Form – Clicking here displays the formula used in the cells rather than their contents.

Show Contents – Clicking on this shows the data type in each cell rather than the contents.

Trace Cell – Trace places an alert on a cell or range of cells which are displayed on-screen after a recalculation using a series of conditions.

Prime Cell – This enables a recursive formula to be primed – that is, given a starting value. A recursive formula is one which contains a reference to the cell itself.

Window range – This alters the default range used by the Range function.

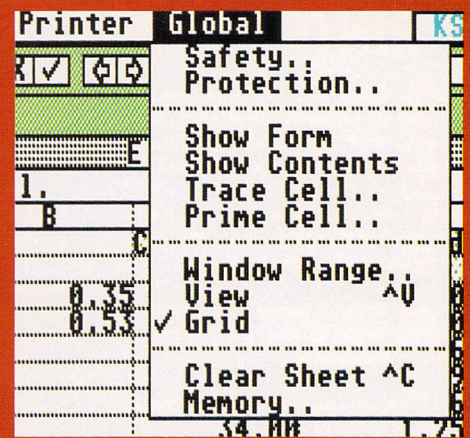
View – This condenses the size of the

output to screen, showing more of the spreadsheet. Useful for selecting large blocks.

Grid – Turns the grid separating the cells on-screen on and off.

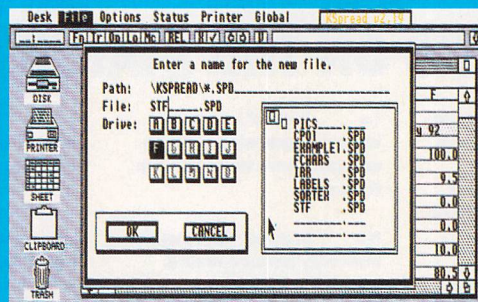
Clear Sheet – Erases all the data on the sheet. Zappo to the lot.

Memory – Indicates the amount of memory you have available and how much has been used.



	Jan 92	Feb 92	Mar 92	Apr 92	May 92
Income	100.00	100.00	100.00	100.00	100.00
Magazines	9.50	9.50	9.50	9.50	9.50
Disks	12.50	22.35	14.00	10.50	0.00
CDs	22.00	0.00	0.00	35.00	0.00
Misc	20.00	5.00	7.50	15.00	10.00
Remainder	36.00	63.15	69.00	30.00	80.50

12 The correct results for each column now appear across the Remainder row. If you alter any of the figures in a cell, any formula relevant to that cell is recalculated in the entire spreadsheet. The spreadsheet can also be updated by double-clicking on the Sheet icon.



13 To save your data for future reference, go to the File menu and select the Save option. The range status bar appears, asking you for the amount of data to be saved – it defaults to the range used in your spreadsheet, so you can just click on OK. When the fileselector appears, enter the name of your data. The file extension defaults automatically to .SPD.

WHAT CAN IT DO FOR ME?

Now that you know how to use K-Spread 2, you're sure to find more and more uses for it. It's ideal for budgeting, keeping track of your cash, doing complicated costing analyses – anything to do with figures. It has a full range of mathematical and trigonometrical functions, but its most helpful feature is automatic recalculation. Once you have the structure of cells and formulae set up, you can explore "what if" questions – change one figure and all the others dependant on it are updated. You'll wonder how you did without it!

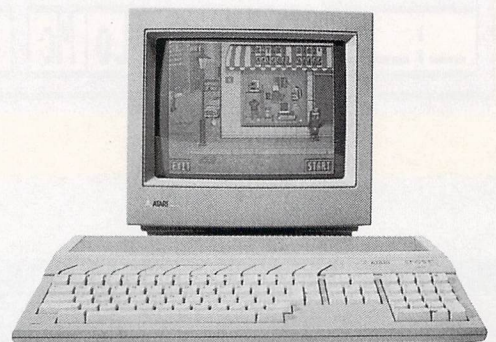


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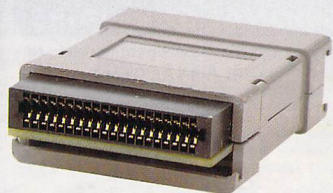
* If you require 24 hour courier to your door, please add £5 else your computer will be sent back by contract parcel post.

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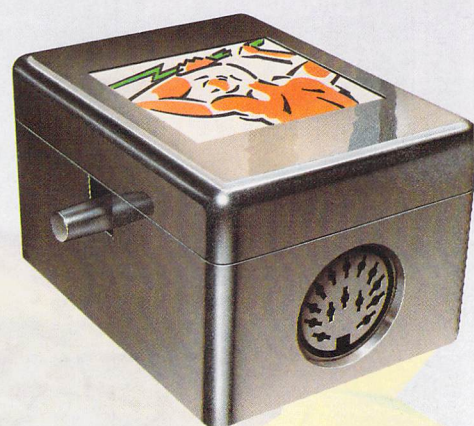
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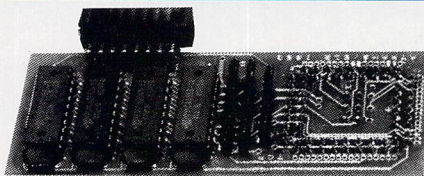
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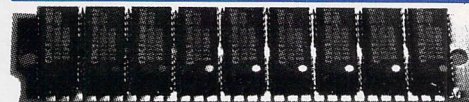
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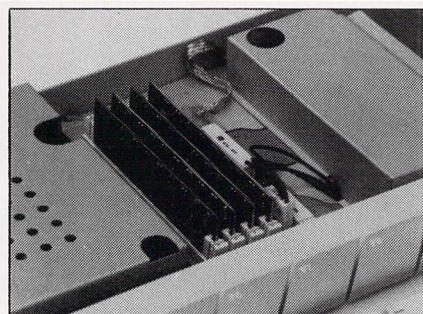
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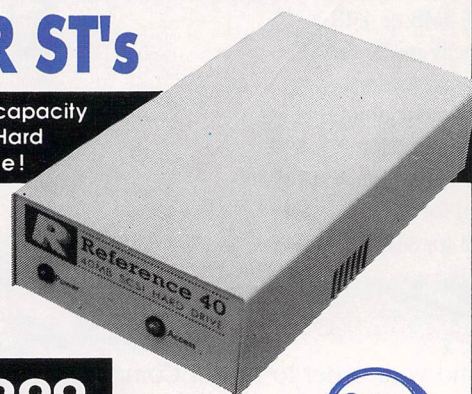
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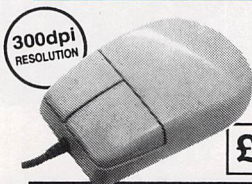


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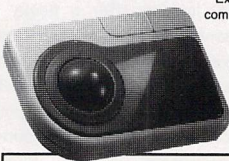
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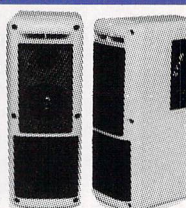
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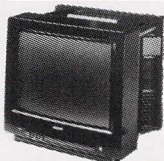
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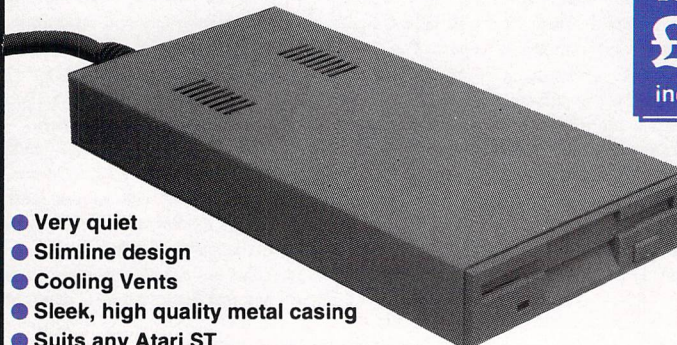
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If demos are ruled illegal, what happens to PD libraries whose living depends on them? ● STOS falls over again

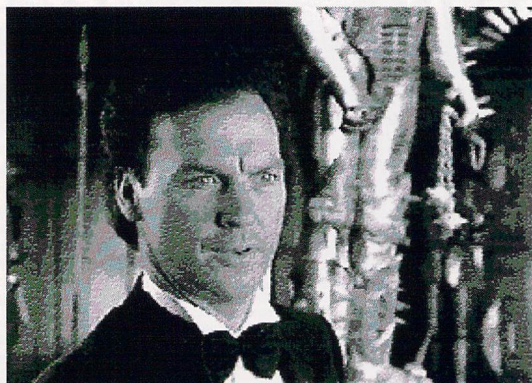
PD libraries under threat

by Clive Parker

Public Domain software libraries could be forced to drop demos and pictures from their collections if a test case by the Trading Standards Office proceeds.

For many libraries and PD writers, demos make up the bulk of their collections and they could go out of business if a ban goes ahead. The source of the new worries is an investigation into the South West Software Library by Dorset Trading Standards Office. Ironically, South West Software make very little from their demo collection, but if the investigation concludes that demos are an infringement of copyright then the repercussions could wipe many Public Domain libraries off the map altogether.

We contacted PD libraries with a large selection of demos in their catalogues to ask them what their reaction would be if the demos were declared illegal. Caroline Price of New Age PDL said: "We will not remove sampled sound demos from our catalogue unless we are forced to. We have over 300 demo disks in our library and they form the main part of our business." Alastair Craig of Riverdene PDL said that they would withdraw any demos containing sound samples from their library if they were officially informed by the relevant authority. Although River-



● Do? For a living? Me? Well, during the day I star in PD demos. But at night... (Significant pause.) Er, have I mentioned that you have a good eye?

dene have nearly 400 demos in their collection, he said it would not affect their trade too much if they were forced to remove them because they have many other types of PD software. Mel Quelch of Wizard PD has over 200 demo disks, of which 60 or 70 use sound samples. He also carries the full range of 72 Persistence of Vision demos, 66 of which use sampled sound. Mel told us: "Until there is an official announcement regarding the legality of demos using sound samples, I will continue to supply them. Once an official decision has been reached I will abide by it. The Trading Standards people and the BPI [British Phonographic Institute] would be better advised to investigate the professional mass copying of music cassettes rather than harassing PD libraries." All the PD library proprietors we contacted believe there is no way sound demos on ST disks would adversely affect the royalties of commercial musicians.

The South West Software Library continues to wait for further developments in the investigation into the allegedly copyright material seized by

Dorset Trading Standards Department in a raid earlier this year (see the complete report in STF 34). As yet no charges have been made. The investigation concerns possible offences under the Trade Descriptions Act and the Copyright Designs and Patent Act. When we contacted the Dorset Trading Standards office they said they were unable to make any comment about the case until the investigation has been completed.

A sample of the disks seized has been examined by the British Phonographic Institute, who believe the material to be subject to copyright law. The BPI are concerned about the distribution of sound demos because they feel that their members are losing royalties due on the material. It has been pointed out to the BPI that sound demos are only distantly related to the original recordings and are in no way comparable to the originals either in quality or length. The issue of sound demos has been ignored for years by the BPI and it seems odd that one PD library which doesn't even specialise in demos has been singled out for this action.

WHEN IS A DEMO NOT A DEMO?

Also on the hit list of titles seized in the raid on South West Software were demo versions of commercial software. It seems that these were seized after the Trading Standards received a complaint from GST Holdings about the *Timeworks DTP* demo on SWSL Disk 842. GST have never released a demo version of *Timeworks* and regarded the disk as infringement of copyright. South West Software pointed out to the Trading Standards that the demo disk had been obtained from another library and was freely available. They also pointed out that the disk contained a document file advertising the features of the full program and describing the benefits. This made the demo indistinguishable from many other software demos available as PD.

Power trip?

Loricel seem to operate on the principle that if they release 25 games a year at least two of them will be good. Consider this: *Jim Power in Mutant Planet* is a shoot-'em-up with five levels, loads of colours and mucho destruction, out next month. *The Cartoons* is a *Lemmings*-a-like that has you, as Superman, looking after a geeky guy wandering across the screen heedless of danger. Out in September. Ol' - or rather young - Baby Jo is back soon too, in *Baby Jo 2*. Now he's caught up in a fairground. Expect *Baby Jo 1*, but bigger-better-more.

● Mr Power demo's an early version of his forthcoming game, *Jim Power*. Note that these graphics will be changed, as will the colours, and the sound, and the gameplay. And the name. Er, is this the right shot?



BITS...

● Have you ever wanted to produce full colour printouts using your humble 9-pin black and white printer? Well, now you can - and for only £19.95. Laser Distribution are releasing *Print Master ST*, an advanced graphics printing utility with several innovative features. Colour separation printing is possible on a mono printer by using different colour ribbons. Almost all colour printers are supported, including the new Hewlett Packard Deskjet 500C (reviewed on page 107), and there is an option for making multiple printouts per page for creating labels. The program can also be set up to be memory resident, so it can be used from within art packages which have no colour printer drivers available. Contact Laser on ☎ 0579 82426 for details.

● Laser are also releasing an upgrade to *Art Master ST* (see review in STF 35) which provides support for the new scaleable FSM-GDOS fonts, adds colour printer drivers and enables you to access "bolt-on" utility tools, which are to be sold separately. Tools in the planning stage include a 3D object designer, an animation utility and digitiser support. You'll be able to get the program upgrade free of charge upon return of your original disk, except for postage and packing costs. *Art Master ST* owners should contact Laser on ☎ 0579 82426 for more information.

● Empire are repositioning themselves in the market place, or whatever it is they call it. They've started a new label, Arcade Masters, dealing solely with arcade games (hence the moniker), while the Empire label is reserved for strategy games, like the excellent *Pacific Islands*.

First up on the new label is *Cool Croc Twins*, a cutesy puzzley game starring Punk and Funk, the laid-back reptilian pair.

This has been imminent for a while now but will definitely be reviewed in next month's STF. After that it's *Magic Boy*, a 64-level puzzle game featuring a wizard's apprentice called Hewlett (of the Packard family). He's released a load of monsters from their cages while the wizard's off wizarding and has to get them back in on each level. As usual we're promised goodies like four-track sound, parallax scrolling and extra colours. Judge for yourself when the game appears in September and gets its comprehensive STF review.

Meanwhile, Empire's *International Sports Challenge*, a sports compilation game in the mould of *Decathlon*, should surface in time for the Olympics, as should *Campaign*, the wartime tank sim. Look for *MegaTraveller 2* sometime this month (and in next month's issue of STF), and the hugely-delayed *Eye of the Storm* (the one with the tasty 3D graphics) in September.

LET ST FORMAT COME TO YOUR DOOR AND GET YOUR CHOICE

AND...

● Everyone's getting in on the Olympic scene. *James Pond 3 - Aquabatic Games* is pencilled in for release sometime this month. The plot has James taking part in the Atlantic's version of the Olympics, the Offishal Aquabatic Games, with the other members of FISH. It's an 11-event joystick waggler in a very different style from the other Pond games, but just as silly. Look out for it in the coming month or so.

Then, just as you've recovered from that bout of fishy silliness, prepare for *James Pond 4 - Splash Gordon* in November. (The Aquabatic Games are just James's way of limbering up for this next adventure, apparently.) This is likely to be very much in the style of *Robocod*, but bigger and better.

● Now you can put your ST in touch with the rest of the world for as little as £140. HCS have announced a clutch of new peripherals for the ST including a 2400/9600 baud external fax modem for only £139.95. The modem is compatible with all fax protocols currently in use and can also be set up for timed sending of faxes to take advantage of cheap off-peak charge rates. The modem can also be used to log on to bulletin boards in the normal fashion.

Other new releases are a colour multisync monitor for £280.00, a PC keyboard interface for £55.00, PC keyboards for £25.00 and the Multirez hardware adapter (£280.00), which enables the monitor output of the ST to be displayed on any multisync monitor. HCS are on ☎ 081 777 0751.

● More details about Atari's forthcoming Falcon machine (see *STF* 33 and 34) have emerged this month, including a rumour that an internal slot for a 386SX processor, enabling direct PC emulation, is to be included in the 68030-based Falcon. Other startling claims are that 32-bit true colour will be employed, enabling any pixel to be any colour with no palette restrictions; external video sync will be supported; and that the system will boast 10-channel 16-bit DMA audio record and playback with up to 50Hz sampling rate, stereo 16-bit DMA audio output and two custom audio coprocessors. Other sources claim that the machine will be able to run the NeXt Step operating system as used on the NeXt range of computers, although this has been denied by Atari US.

● Yamaha have added a direct to hard drive recording processor, the CBX-D5, to their range of MIDI equipment. You connect a hard drive directly to the processor unit via a SCSI interface, and then connect the unit to your ST. This means that the ST uses less memory, enabling supporting

sequencing software - such as Steinberg's specially developed *Cubase Audio* - to be run alongside.

The CBX-D5 is a four-track digital recorder capable of two track stereo simultaneous recording from either digital or analog sources. Recordings can be made at the standard 16-bit CD standard of 44.1KHz or at 48KHz for even higher quality results. Two other rates of 32KHz and 22.05KHz can also be used.

Features of the CBX-D5 include EQ and modulation effects and onboard digital reverb. Units can be daisy-chained together to provide more tracks, but in such a setup each unit requires its own dedicated hard drive. Due in the autumn, the CBX-D5 is rumoured to cost about £2,000 - a bit steep for the amateur MIDI enthusiast but a price breakthrough for the professional music industry. Yamaha-Kemble can provide more details if you contact them on ☎ 081 419 5419.

● You can pick up a Golden Image Hand Scanner complete with image manipulation software for £120, now that Ladbroke Computing have dropped the price of their Golden Image add-ons. The Golden Image Hand Scanner complete with *Touch Up* and *Deluxe Paint* is £119.99. The Golden Image Optical Mouse is now £24.99 and the Golden Image external ST drive is now £59.99. Phone Ladbroke on ☎ 0772 203166 for details.

TOS teething troubles - solved

by Clive Parker

It is now coming to light that Atari's new version of TOS, offering vastly improved Desktop features, is incompatible with STOS and some games.

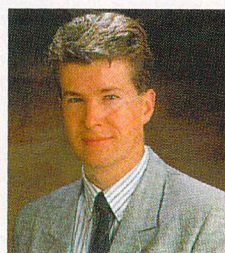
The new TOS - version 2.06 - is currently supplied only in the Mega STE and gives that machine many features previously available only through replacement Desktop software, including the ability to drag program icons onto the Desktop and run them from there, assign programs to Function keys and run them at a single keystroke, and much more. However, STOS Basic and any programs created and compiled from within STOS, such as the *Fun School 4* range of educational software from Europress Software, have proved incompatible with the new TOS. STOS, however, has a history of incompatibility with successive TOS upgrades - the same thing happened with TOS 1.6 and 1.62. At

present Europress have no plans to release an upgraded version of STOS to solve the problem.

Fortunately, the problems with major professional applications that occurred with the introduction of TOS 1.6 and 1.62 on the STE have not been repeated on the new machines. We tested a large selection of software on a Mega STE, including *Protext 5.5*, *Pagestream*, *Tempus 2*, *Write On*, *That's Write*, *GFA Basic 3.5*, *Hisoft Basic 2* and *Canvas*. All the software worked perfectly, although some applications - *GFA Raytrace* and *Spectrum 512* - required the processor speed to be switched back from 16MHz to 8MHz in order to function correctly.

Games we have tested that don't work include *Titus the Fox*, *Pacific Islands* and *Legend*. Games that do work include *Gobliins*, *Videokid*, *Microprose Formula One Grand Prix* and *Vengeance of Excalibur*.

Although only standard in the Mega STE, the new TOS is now available as an upgrade for any ST owner. To guarantee that you don't suffer incompatibil-



● Darryl Still of Atari - delighted to give official Atari approval to the *STF Soup Up* campaign.

ity difficulties, invest in a switchable upgrade. In a tie-up with Atari, the Atari Workshop and Compo, *ST FORMAT* have come up with a switchable board that plugs simply into your machine. See page 32 for details of the new TOS, then page 42 for full details of the *STF Soup Up* Campaign. Our TOS 2.06 upgrades are the only ones using the official UK ROMs, and the TOS 2.06 upgrade for the STE is the only switchable board available anywhere.

Darryl Still, Atari UK Marketing Manager, said: "Atari are delighted to give official approval to the *ST FORMAT* Soup-Up Campaign. It's an excellent collection of hardware upgrades which will work for any ST, emphasising the system integrity we have maintained from the beginning and showing that the opportunities to update the ST are simply unrivalled by any other systems."

"The *ST FORMAT* Soup Up Campaign is an excellent collection of upgrades for any ST"

DARRYL STILL

Kuma software on the up and up

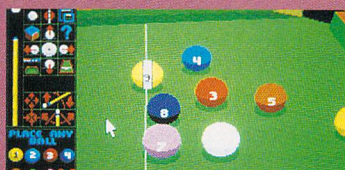
Respected "serious software" house Hisoft are taking over the manufacturing and marketing of Kuma's entire range of ST and TT software after signing a licensing agreement with Kuma Computers. Kuma now intend to concentrate on the publishing aspect of their business - they already publish over 100 technical and computing books. Hisoft feel that the software now licensed from Kuma will enhance their range.

The software now being produced by Hisoft includes the *K-Comm 2* communications program (£49.95), *K-Roget* Thesaurus (£49.95), *K-Graph 3* business and scientific graphics package (£49.95) and *K-Word 2* word processor (£39.95).

The original Kuma software was written in *Aztec C*, an older, slower version of C that creates larger files than modern implementations of the programming language. Hisoft will be working on recompiling the programs in *Lattice C* and making them compatible with Multi-TOS, the new multi-tasking operating system due any time now (see our reports in *STF* 34 and 35). David Link of Hisoft said: "As a result of our recompiling the programs they will be slicker, faster and easier to use," with "at least a two-fold speed increase in everything." The programs are expected to be converted by the end of this year. Contact Hisoft on ☎ 0525 718181.

Cue a new game

Archer Maclean is at this very moment hard at work at the sequel to the outstanding *Jimmy White's Whirlwind Snooker*. It's a pool game this time, featuring every sort of pool you can think of (well, American and English, anyway, but not swimming) and using the same 3D techniques as in *Snooker*. It should very probably be out as you read this, or thereabouts, barring unforeseen nastiness.



● Looks a tad like *Snooker* with a few numbers stuck on the balls, doesn't it? Well, that's *Pool*, isn't it: snooker with a few numbers stuck on. I know all about sport, me.

OF SUPERB GIFTS - OR TWO ISSUES **FREE!** TURN TO PAGE 64!

ST Repairs

Our Service department can repair ST's in minimum time at competitive rates. We can arrange for courier pickup and return delivery of your machine to ensure it's safety. We even have a same day service which will ensure your machine is given priority and subject to fault, completed the same day. We can fit memory upgrades, PC Emulators, Security devices, ROM upgrades, hard drives to Mega STE's etc. We offer a Quotation service for £15 for which we will examine your machine and report back with an exact price for repair. If you do not wish to go ahead with the repairs then just pay the £15. However if you do go ahead then the charge is included in the minimum charge. Please note: The minimum charge covers labour, parts are extra.

Quotation	£ 15
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ST Secure is a hardware protection system for the Atari ST which stops unauthorised use of your computer and any hardware connected to it. ST Secure measures just 1 inch square and can be installed without soldering in about 30 minutes. Once installed ST Secure will allow approximately 45 seconds of computer use before resetting the computer. If during this time the password is entered correctly then ST Secure is disabled until the next power up.

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1040STE Curriculum	£299
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Phone for printers, monitors etc.	

GI Hand Scanner £119.99

The Golden Image Hand Scanner for the Atari ST features a 105mm scanning head, variable contrast control, user selectable scanning resolutions of 100, 200, 300 and 400 Dpi, one letter mode for high contrast B/W images and 3 photo modes for various shades of grey. The high quality hardware is backed up by two of the most respected graphics packages around. Migraph's Touch Up for scanning and editing hi-res and grey scale images and Deluxe Paint art package for lower resolution colour.

- ✓ 100, 200, 300, 400 Dpi scanning resolution
- ✓ 105mm scanning head
- ✓ 1 letter mode, 3 photo modes
- ✓ Includes Touch Up
- ✓ Includes Deluxe Paint

Coming soon: Silhouette, Auto tracing/line art package which converts bit images to Vector images at the incredible price of £60.

GI External drive £59.99

The Golden Image External 3.5" Floppy drive for the Atari ST features 720K formatted capacity, double sided double density, LED track counter, Through port compatibility for older ST/STM machines, external PSU.

- ✓ 720K Formatted capacity
- ✓ LED Track Counter
- ✓ External Power Supply
- ✓ Daisy Chain Through Port

DataPulse Plus

ST Hard drives

The Data-Pulse range has recently been re-designed. The Data-Pulse Plus range now offers a more compact case that cuts down on noise even more, all ports are marked, an extensive range of software utilities are now included and our range of special offer utilities has been expanded confirming our commitment to future support.

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Excellent backup utility

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A real time data compression/de-compression system to increase the capacity of your hard drive.

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The Data-Pulse Plus 120 and 240 incorporate the new Quantum mechanisms which feature 256K Read & Write disk cache, faster access time and improved reliability. All Data-Pulse Plus drives include Quantum mechanisms which include 2 year warranty from date of manufacture.

Aries Upgrades

The Aries Upgrade board is an in house designed, Multi layer board utilising high density ZIPP RAM chips. The board has been designed to allow progressive upgrading from the base 512K up to 4Mb. The board does require some soldering but once installed is very reliable. The board is hand assembled in our workshops by skilled technicians and is fully tested before despatch. It also comes complete with fitting instructions and test software.

Our technicians can fit the board to any ST for a small fitting charge. We can arrange courier pickup and return to ensure fast turn around. A same day fitting service is also available. Please phone for further details of courier and same day service.

Aries Upgrades (any ST(FXM))

512K Aries board	£ 39.99
2Mb Aries board	£ 99.99
4Mb Aries board	£ 169.99
Courier pickup	£ 10
Courier return	£ 6
Fitting charge	£ 15
Same day charge	£ 15
16/4 chip upgrade	
STFM	£ 24.99

Please check the configuration of your machine before ordering. These chips are not surface mount.

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GI Optical Mouse £29.99

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- ✓ 250Dpi, 500mm/sec tracking speed
- ✓ Fully Optical
- ✓ Mouse mat included
- ✓ Switchable ST/Amiga

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The Golden Image Opto/Mechanical Mouse offers 290 Dpi resolution, 2 Microswitched buttons for greater reliability and crisper, more positive response, Anti-static silicone rubber coated ball. Also includes mouse mat.

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Ladbroke Computing International

Ladbroke Computing International are the longest established Atari dealer in the UK. We have developed an extensive customer service policy which involves testing of all Hardware prior to despatch to ensure that goods arrive in working order, offering free advice and support over the phone and keeping customers informed. Although our prices are not always the cheapest we do endeavour to offer consistently good service and backup. All prices are correct at copy date 21/05/92 (while stocks last), and are subject to change without prior notice. All prices include VAT but exclude delivery. Add £6 next working day carriage or £3 for postal carriage on items under £150, add £3 carriage for items over £150. All prices available on Mail Order. Shop prices may differ. Shop/Mail order premises: 33 Ormskirk Road, Preston, Lancs. PR1 2QP. Open Monday to Saturday 9:30am to 5:00pm. Phones answered from 9:00am. Dealer enquiries welcome. Ladbroke Computing International is a trading name of Ladbroke Computing Ltd. All trade marks recognised. BFPO addresses abroad, deduct 17.5% VAT and add normal UK carriage.

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→ ...PIECES

● Mindscape have just released the *Knightmare Adventurer's Handbook*. Although it contains the entire solution to each of the game's four quests, the hints are in random order and are encrypted, so you have to work as hard at getting the hints as you do at the game. The book costs £5.99 from software shops or, with a credit card, direct from Mindscape on ☎ 0444 246333.

● Moriarty Software, inventors of the *Monulator* mono emulator, have come up with another amazing emulator. It's called *Prism* and they claim it can emulate all three TT resolutions on a plain vanilla ST.

This means that it should be possible to use programs that take advantage of the TT's hardware, like *Prism Paint* and *Chronos*, without doshing out £2,000 on new kit. In TT low res, 256 colours can be displayed on-screen using a program which enables *Degas* and *Neochrome* pictures to be enhanced with the extra colours. To emulate TT high res (1,280 x 960 pixels), the screen becomes mouse-scrollable (in much the same way as the *Monulator's* display can be scrolled). On the STE, there are even more goodies like hardware scrolling and interlace modes to give more colours.

Prism is £20.00 from Moriarty Software, who now reside at PO Box 262, Crawley, West Sussex RH11 7FJ.

Calamus SL released

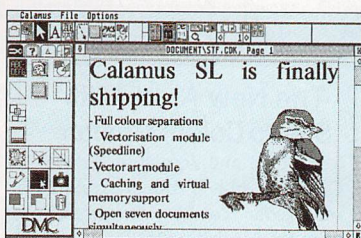
by Tim Anderson

Calamus SL is now available from Halco (☎ 0734 441525). For a mere £587.50 the new, modular, state-of-the-art DTP package offers the ability to produce colour separations, the facility to load up to seven documents simultaneously in separate GEM windows, vertical justification, and support for caching and virtual memory. Caching speeds up the display, and virtual memory removes restrictions on the size of your document, if you have plenty of free space on your hard drive.

Extra modules currently available include *Speedline*, which converts bitmapped images into vector drawings that can be rescaled without loss of quality. The resulting drawings can be further enhanced using *Vector Graphic*, another of the new editing modules.

If you've yet to win the pools, you might like to consider old favourite *Calamus* 1.09n, now reduced to £139.99. Alternatively, *Calamus S*, similar to SL but without colour capacity, is to be available for £499.38.

Is *Calamus SL* all that it's cracked up to be? Look out for the full review in the next issue of *STF*.



● The legendary *Calamus SL*, now available from Halco.

Calligrapher gets PostScript output

by Tim Anderson

Working Title have released a PostScript printer driver for their *Calligrapher Professional* multi-font word processor. Until now, none of the leading ST word processors could drive a PostScript laser printer, so this means ST owners now have access to the high-end page-description language that is both scaleable and independent of particular software packages.

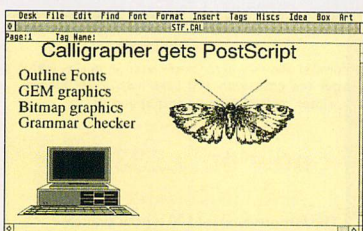
Calligrapher already supports vector outline fonts, capable of displaying and printing type at any size from 6-point to 128-point, and the distributors offer a range of nearly 70 compatible fonts at £18.00 each. The new driver opens up the possibility of obtaining

typeset-quality documents by taking industry-standard PostScript files to a bureau for output at 1,200 dots per inch or more on a Linotronic typesetting machine.

Another possibility is using *Calligrapher* with a PostScript interpreter such as the recently-launched *CompoScript* (£233.83 Compo Software ☎ 0480 891819). This gives you access to the 35 standard PostScript fonts and can print in good quality on virtually any printer, even a nine-pin dot matrix.

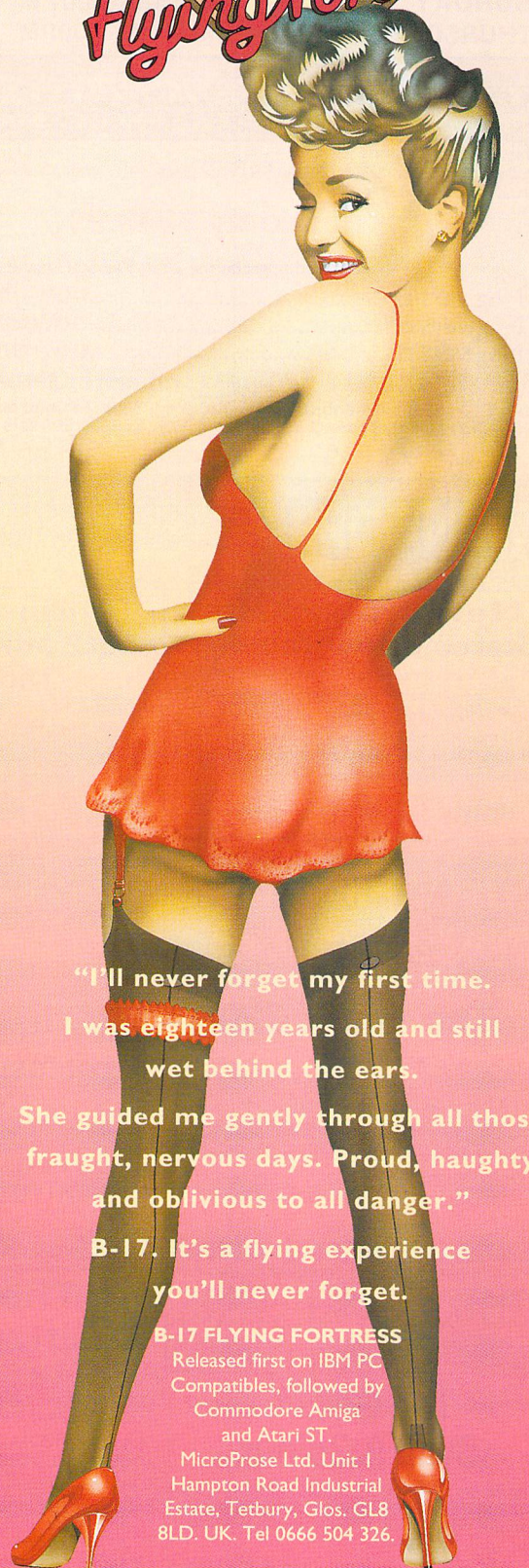
Working Title have also released an ST grammar checker. This can check your document for errors in five categories and analyse sentence length, word usage, and readability level.

Calligrapher Professional costs £99.00; the Gold version with modular extensions including the Grammar Checker costs £139.00. Both versions include the PostScript driver as standard. If you have an earlier version and want to upgrade, you can get the PostScript driver for £12.00 and the Grammar Checker for £25.00. All are from Working Title ☎ 0865 883592.



● The multi-featured *Calligrapher*, now with PostScript driver.

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Missile Command, Super Breakout, Battlezone, Crystal Castles plus 1st Word, Neochrome and Ani St colour animation package and ST Basic.

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WARNING: Before you purchase a monitor make sure it has a full UK specification. You might be buying what you think is a similar monitor at a lower price but it is likely to be a "GREY" import. Grey import monitors do not comply with British safety standards and are not covered by an official warranty.

New Protar Visto Stereo colour monitor

This monitor uses the same tube as the Philips 8833 MK2 and has the same specification. The Protar comes with a full 12 month replacement guarantee. This must be the best value medium res. monitor on the market. Atari cable included. Tilt and swivel stand only £11.99 when purchased with this monitor. Cover only £5.99

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Philips CM8833 MK2 stereo colour monitor

Colour stereo monitor. 640*200 line resolution, green screen facility, one years on site maintenance, cable for Atari included. Tilt and swivel stand only £11.99 when purchased with monitor. Cover only £5.99

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The New Atari 1435 Stereo Colour Monitor

Same tube and resolution as the CM8833 Mk II but restyled, rebadged and colour coded to match your Atari. Includes a built in tilt and swivel stand.

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High resolution mono monitor. 640 * 400 resolution. Stable image and razor sharp quality. The obvious choice for demanding screen intensive applications

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24 pin quality at the price of many 9 pins. 210cps draft, 604cps in LQ. 16k buffer expandable to 48k, 10 resident fonts, LCD front display, Auto emulation selection

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Brief Postscript version Specification:
2 Mb of RAM as standard expandable to 6 Mb.
4 pages per minute.
HP Laser Jet, FX and Postscript compatible.
35 postscript fonts.

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The Citizen Swift 9 Colour

Unbeatable value colour printer. 4 resident fonts, 192 cps draft and 48 cps in NLQ. Highly recommended. This printer is also available in a wide carriage (136 column) version

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The New Citizen 224

A replacement for the famous 124D, the 224 now comes with the option to upgrade to a high resolution colour printer. If you want 24 pin quality, you want to print in colour if necessary and you don't want to spend a fortune, the new 224 is an ideal solution. Using the same technology as the Swift 24, the 224 is basically a cut down version.

192 cpi draft and 64 cpi letter quality with 3 built in fonts.

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printer allows you to create laser jet quality without the cost. with 100 page auto sheet feeder, printer cable. 3 page /minute speed and

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The HP Deskjet 500C

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As official dealers for Rombo, we are now able to offer this excellent package at a great price. The Complete Colour Solution comes with RGB Splitter, VidiST, Vidi Chrome, Power supply and Spectrum 512k graphics package

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VIDI-ST

Frame grabber.

High quality digitizing. Inc Vidi chrome colourising software

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A powerful DTP package for professional use. This is the very latest version of this package. Includes 10 compugraphic fonts, colour printing, spell checker and much more

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FLEXIDUMP Plus

This printer utility allows you to produce colour dumps of the highest quality on a dot matrix printer. Printer drivers include LC10, LC24, Swift 9/24 and NEC

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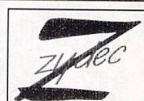
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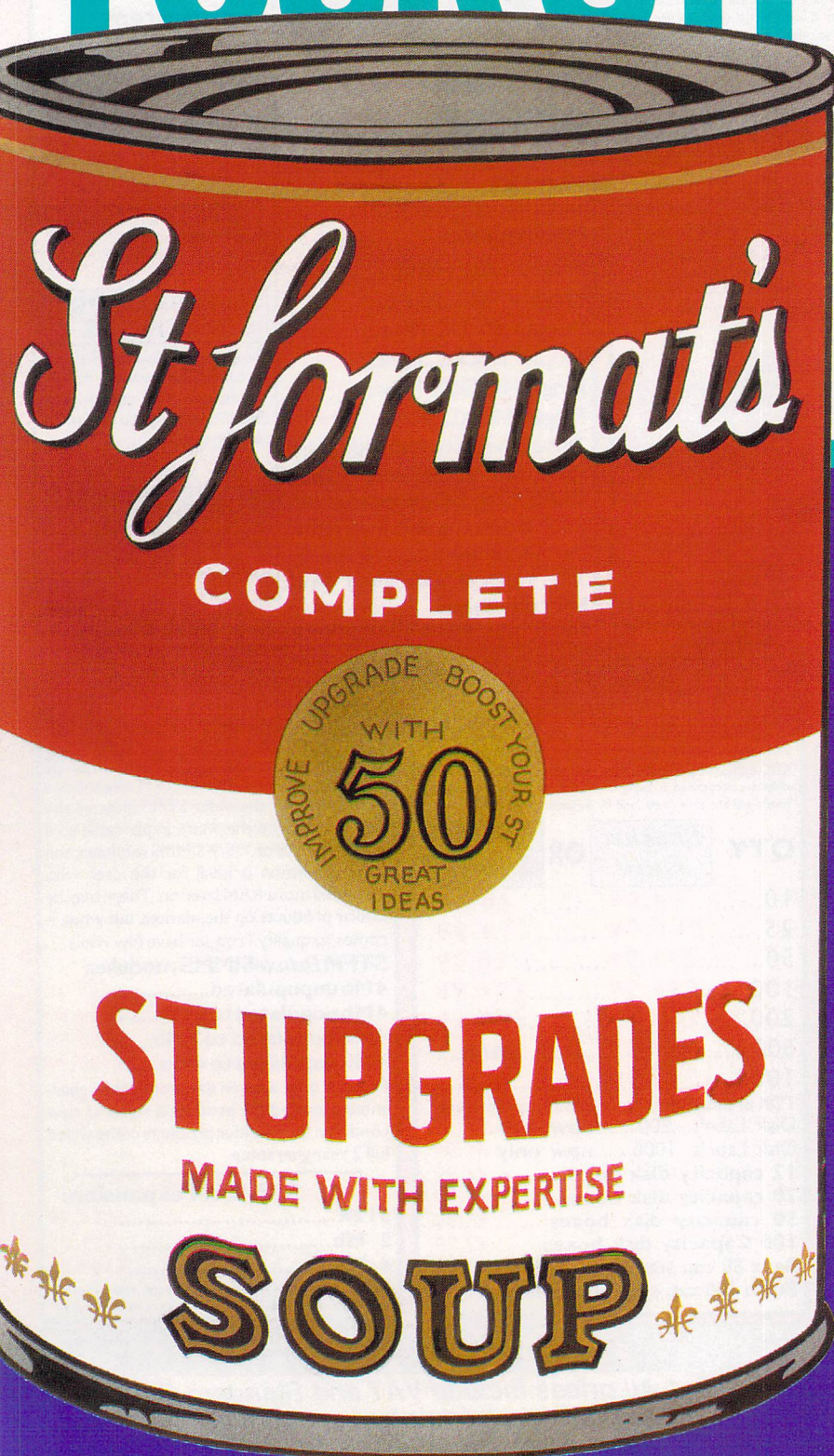
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SOUP UP YOUR ST!



Your ST is a powerful machine, one of the most versatile home micros available. Yet with a little outlay you can boost the performance of your machine almost beyond recognition. Clive Parker and Ed Ricketts guide you through 50 top ways to expand your system

ON TONIGHT'S MENU...

There are three sorts of upgrades you can add to your ST. There are those which help you get more power out of your machine for minimum expense – like a blitter chip or replacement Desktops. Then there are those that transform your ST into a real monster but may cost a little more – like accelerators, graphics cards and emulators. Finally, there are those frivolous extras which might not be essential but make life with your ST that much more exciting – replacement keytops, a tower case or a new mouse. Altogether we've got 50 great ideas to totally revolutionise the way you use your ST.

Some of these upgrades require you to lift the lid off your machine and install internal boards. This can be something of a nightmare if you're not on good terms with your soldering iron, so to help you boost the performance of your ST we've got together with Compo Software, Atari Workshop and Atari to offer you the *ST FORMAT* Soup Up Service: we collect your machine, fit the upgrade you want and send it back to you. Plus, we're also offering to give your ST a full service, or repair if needed. Turn to page 42 for full details!

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50
GREAT IDEAS
TO EXPAND
YOUR ST

FOR STARTERS

First off, here's a list of relatively simple upgrades you can invest in which boost the power of your machine for the minimum outlay. They're all things you should have considered by now



ONE

BLITTER

Once rarer than an original game plot, they're now standard in each STE. What do they do? A blitter (Block Image Transfer) chip takes care of mundane drawing operations so that the 68000 central processor doesn't have to spend all its time updating the screen. The blitter speeds up area fills, rotation and magnification, brush line drawing, text transformations and scrolling, window updating, pattern filling and memory to memory block copying. The end result is that you get a much faster display.

Fitting a blitter isn't an easy task, though. If you don't know pin 1 from pinhead, your best bet is to send off your ST to System Solutions ☎ 071 252 7775). They charge £30.00 to fit a blitter to your ST, but expect to pay less than this if you want extra bits added at the same time. They can also sell you the blitter and a suitable socket (without instructions) for £29.95.

STF Rating: 74%



TWO

CLOCK CARTRIDGES

One of the annoying things about the STFM and the STE was the lack of a battery-backed clock built into the machine – the Mega ST and the newer machines have them as standard. If you don't have a built-in clock, it can be a chore having to reset it every time you boot the machine, so a plug-in clock in the cartridge port can be simply plugged in and forgotten.

Why do you need a clock anyway? When you save a file, the date and time are saved along with the data – this makes it a simple task to keep track of a particular day's work. Also, if you sort in date order, files are always listed in descending order with the most recent file at the top. If you do invest in a clock, make sure you get one with a throughport – otherwise it ties up the cartridge port, making it impossible to use another cartridge at the same time.

Forget-Me-Clock 2 (£17.95) from Marpet Developments. The famous Forget-me-Clock 2 cartridge was the first with a throughport. Easy to set up and install. Comes with a two year guarantee. Contact Marpet on ☎ 0423 711671.

STF Rating: 89%

The Power Clock (£17.95) from Power Computing (☎ 0234 843388). Similar in design to the FMC 2, the Power Clock now has a throughport.

STF Rating: 84%



THREE

EXTERNAL DOUBLE-SIDED DRIVE

A second disk drive can save immense amounts of time with such things as file or disk copying. You only have to copy more than seven files at a time using one drive to appreciate the convenience of a second drive. Some games also take advantage of twin drives, cutting down on in-game disk swapping.

Installation is simply a matter of plugging the drive into the ST. The PC720B (£50.00 from Power Computing ☎ 0234 843388) has impressive extras like a protected software backup facility, a built-in virus blocker and the ability to boot from drive B (useful for booting double-sided games if you've only got a single-sided internal drive).

Review: STF 28

STF Rating: 88%



FOUR

REPAIRS

Yes, that's right, repairs. If your machine is acting a bit peculiar or keeps crashing for no apparent reason, you may have a hardware problem. For example, you may have trouble reading disks or running programs, or your memory upgrade may be playing up. Your MIDI ports or your keyboard may be a touch on the knackered side or your mouse or joystick unresponsive. If you leave a hardware problem, it could get worse and affect another part of the machine, so get it repaired before it gets any worse. This can be



FIVE - FOURTEEN



1 Crack Art. Goodmans PDL. Disk GD 1524

A gorgeously wonderful and scrumptious art program. It does all the normal stuff and a heck of a lot more besides. Like what? Like splines (smooth curves automatically drawn between points you set), or block effects, or being able to wrap pictures around tubes and spheres, or a fast and flexible zoom mode.

You need 1MByte to use the program and the instructions are in German, but don't let that deter you. The icons are in English, it's great fun to experiment with, and it's a great program, well designed and executed.

Review: STF 34

STF Rating: 94%

2 Picswitch. ST Club. Disk UTI.42.

Actually *Picswitch* is just part of a 40-program collection on this disk. If you ever need to convert *Degas*, *NEO*, *Tiny*, or any of 11 other format pics to a different format, you need this program. Dead simple to use, in either colour or monochrome (it can also convert colour pics to mono and vice versa). When's the new version coming though?

Review: STF 16

STF Rating: 92%

3 Sozobon C. Goodmans PDL. Disk GD222.

C is like *Vic Reeves*: you either think it's marvellous or you can't see what's so great about it. The best way to find out is to try it, and there's no better way than with *Sozobon C*. You're provided with a compiler which produces assembly code (so it can be hand-tweaked), an optimiser (which speeds up and "tightens" the assembly code), and an assembler to make the finished program. You also get GEM and floating point libraries and Dale Schumaker's "dlibs" general-purpose library.

If none of this makes sense, get *Sozobon*. Or a *Vic Reeves* video. (I wouldn't let it lie.)

STF Rating: 91%

4 The Vault. MT Software. Disk U93.

Hard drive backup software is only useful at one particular point: when you boot the drive and sit gaping as the horrible "Data on disk C may be damaged" message appears. Back up your hard disk! It's worth it. The best way to do it is with a program like *The Vault*, which makes things simple. Get yourself a huge pile of floppies, run this and it's a piece of cake.

The program splits large files over one or more disks so there's

no problem with huge samples and the like. There's an Incremental mode so you can back up only the bits that have changed since the last time you backed up. Makes backing-up as painless as it's ever going to be.

STF Rating: 90%

5 Vanterm. Goodmans PDL. Disk GD708.

Something of a cliché in the PD world, *Vanterm* always pops up in "best of" roundups. But then it is the best – or at least the easiest to use for what it does. You get X and Y modem, ASCII transfer, disk and file manipulation from within the program, oodles of on-line help, a capture buffer with the ability to save it, a comprehensive dial directory, and it's all immediately accessible from standard GEM menus.

Review: STF 17

STF Rating: 88%

6 Fastcopy 3. The ST Club. Disk DMG.18.

Disk copiers, *shmisk* copiers. There's only one worth getting, and it's *Fastcopy 3*. This baby can format and copy disks to the weirdest configurations (but not protected ones). There's a virus checker, a simple hard drive backup option and a pretty dis-

play. Useful but hardly essential.

Review: STF 34

STF Rating: 89%

7 ST Writer Elite. ST Club. Disk WPR.22.

The best PD word processor. This latest version includes GEM menus as well as the normal primitive menu interface, making it suitable for GEMheads and DOS-freaks alike. No WYSIWYG display, so imagination comes in useful, but it is fast, supported by plenty of printer drivers (not on this disk though) and fairly simple to get to grips with. Splendid.

STF Cover Disk 27

STF Rating: 88%

8 Double Sentry Accounts. South West Software Library. Disk 763.

Accounts. Exciting, huh? Still, they have to be done at some point and you may as well make your ST suffer as well. As accounting programs go, this one is quite good at – er, accounting. Actually, it's only a demo of the full program, though you get everything you do in the main program though you can't do VAT reconciliation and you're limited to 100 entries. Fine for small businesses.

Review: STF 34

STF Rating: 86%

9 Superboot 7. MT Software. Disk U29.

Boot-up programs are nearly as numerous as fractal progs, but none are as comprehensive as *Superboot*. A list is in order: choose which programs and DAs to load, set up function keys to load different sets of progs automatically (so you can, for example, have GDOS loaded or not), show a start-up screen, play a digitised sound on startup, set the date and time, have password protection, autoboot a program, and, ooh, loads of stuff. Stupendously well-programmed with a massively friendly configuration program.

Review: STF 34

STF Rating: 85%

10 Opus. Goodmans PDL. Disk GD312.

Another dull but worthy program, but good at what it does: it's a spreadsheeting and charting program. Obviously, it doesn't match the £300+ professional programs, but you could probably use it for at least 70% of cases. Comes with on-disk documentation and loads of examples. You need GDOS to use the Charting option, which isn't provided because of copyright.

Review: STF 14

STF Rating: 78%

TEN PD PROGRAMS YOU SHOULDN'T MISS



FIFTEEN

TOS 2.06 UPGRADE FOR STF, STFM, MEGA ST AND STE

What's this? A version of TOS with a 2 as its first digit? If that doesn't sound impressive enough, the features available from this new TOS are set to make your eyeballs roll. Atari's new version of TOS is currently only available in the TT and Mega STE, offering *NeoDesk*-like features which make the Desktop a dream to use. It is now possible to install TOS 2.06 in the entire range of Atari ST machines, right back to the old STM. The upgrade is in the form of a small board which fits into pre-STE machines. In the STE, all you have to do is swap the TOS 1.62 ROMs for the new ones. Some STEs, however, may have ROM sockets with only 28 pins, and the new 2.06 ROMs do not fit directly into these because the larger 32 pin ROMs are now used.

Why use TOS 2.06 anyway?

- Many of the features of replacement Desktop programs such as *NeoDesk* and *DC Desktop* have been made available, as well as a few features that Atari themselves have added.

- Atari's new *Xcontrol* accessory is fully compatible with TOS 2.06.

- You can drag program icons onto the Desktop and activate them by double-clicking on them.

- Up to 20 programs can be assigned to the Function keys and run by a single keypress.

- Icons can be defined in a suitable resource file editor, or by using a .CPX utility.

- You can print text files by dragging them to the printer icon.

- Dragging a file to a program icon launches the program and automatically loads in the file.

- Items selected for copying stay selected when a window is scrolled. All items in a window can be selected at the touch of a pre-defined key.

- Icons fit into the window, so only vertical scrolling is required to locate an item.

- There is a search facility to find files with specific names and file extensions. The normal wildcard entries of ? and * are supported.

- Desktop and window pattern and colour can be defined – so you can get rid of that appalling shade of green.

- Up to seven GEM windows can be open at once.

Software compatibility

When Atari release a new version of TOS on ROM there are inevitably software incompatibility problems, mainly with games. Virtually all professional software works with TOS 2.06, with *STOS* being the notable exception. EuroPress Software have no plans to sell a version of *STOS* with TOS 2.06 compatibility, but it is likely that an upgrade program is to be released that will convert old versions of *STOS* to be compatible. This has happened before to make *STOS* compatible with TOS 1.6 and 1.62. There do not appear to be any other problems, though *NeoDesk 3* seems to be unhappy with the new TOS. Sometimes it boots and sometimes it doesn't – though when we spoke to Electric Distribution they were looking at ways to remedy the fault. Most Desk Accessories seem to work, although some PD ones do fall

over. In general, most PD programs which work on TOS 1.62 (the one in the STE) work on the new version.

Compatible software we've tested includes:

Vanterm
ARC Shell
Canvas
Cyber Paint
Degas Elite
Deluxe Paint
Fastcopy Professional
1st Word Plus
GFA Assembler
GFA Basic 2
GFA Basic 3
GFA Compiler
GFA Draft Plus 3.3
GFA Raytrace
Hisoft Basic 2
Hyper Draw
Hyper Paint
Knife ST
Neochrome

a problem if there is nowhere near to where you live – you'll have to send the machine off to be checked and repaired, and there is always the chance that things may be "fixed" which were okay in the first place. If you want to be safe, consider one of the following reputable repair centres, or turn to page 42 to have a look at our special service.

Evesham Micros (☎ 0386 765500) offer a fixed repair rate of £65.00, includes return postage and packing.

Silica Systems (☎ 081 309 1111) offer a range of repairs for different machines starting at £57.58 for an old STM and rising to £99.88 for a Mega ST. Carriage is included in the price, but replacement power supply, floppy drive and keyboard are not.

WTS Electronics Ltd (☎ 0582 491949) repair service costs £49.95 including postage and packing and a replacement power supply if necessary. Disk drives and keyboards cost £25.00 extra if replaced.



SIXTEEN

REPLACEMENT DESKTOPS

That standard bilious green ST Desktop is awful, no doubt about it. What you need is a replacement Desktop. There are two commercial ones and two PD ones. The commercial ones, are, of course, better than their PD equivalents.

NeoDesk is far and away the swishest Desktop. This could well be the most useful bit of software you're ever going to buy, particularly if you have a hard drive. It has hundreds of features, such as custom icons for each program, the ability to drag files and folders directly onto the Desktop and add a Desktop picture. It works in all three resolutions, has much improved window gadgets, extended formatter, macro utility, a clipboard (like an automatically-sized

RAMdisk), recoverable trashcan and loads of other stuff... Get it. You'll love it. £39.95 from Electric Distribution ☎ 0480 496666.

Reviews: STF 18, 31

STF Rating: 94%

DC Desktop is a sort of poor man's *NeoDesk*. It too has redefinable custom icons (with a 3D look), the ability to drag files onto the desktop, and some other similar features, but it's not nearly as flexible. Some menu options are called as separate programs, meaning more disk accessing, and the program just doesn't have the same friendliness. It's cheaper though, at £21.00 from Softville ☎ 0705 266509.

Review: STF 21

STF Rating: 71%

Gemini and **KAOS** Desktops are the PD equivalents. Both offer redefinable custom icons and a way to store files directly on the Desktop, but neither has the same number of features as *DC Desktop* or *NeoDesk*. You do get a Command Line Interface with *Gemini* (which is extra with *NeoDesk*). *Gemini* is £3.00 and is available on Disk 909 from The South West Software Library, PO Box 562, Wimbourne, Dorset BH21 2YD.

Review: STF 34

STF Rating: 79%

KAOS Desktop is also available from South West Software (Disk 1736).

STF Rating: 75%



SEVENTEEN

REPLACEMENT FILESELECTOR

The *Universal Item Selector* v3.32 makes the standard ST version look like a small dry dead thing. First, you get a much larger display, sorted into a user-definable number of columns. You can change individual files' attributes (Hidden, Read Only and so on), store commonly-used extensions and call them up immediately, move, copy, rename or delete files, format a disk, find, print or show files and do all the file-related things you might want to do, without going

back to the Desktop. A must. £14.95 from The ST Club ☎ 0602 410241.

Review: STF 34

STF Rating: 90%



EIGHTEEN

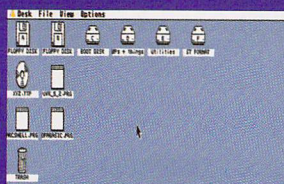
SINGLE-SIDED DRIVE UPGRADE (INTERNAL)

If you're still struggling with a single-sided internal drive, for God's sake upgrade. It's so easy: all you need to do is unplug a couple of ribbon cables inside and wangle the new one in. You might need to make a small hole in the casing of your ST for the drive eject button, but this is easily done too. For a little bit more than the price of a Microprose game, you can join the smart set. Power Computing on ☎ 0234 843388 do two versions: the PC720I at £39.95 and the PC7200I at £45.00 (the official Atari version, for which you must have an existing drive with a small eject button).

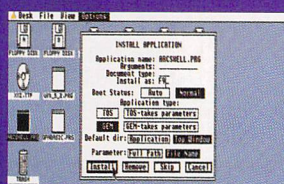
STF Rating: 83%



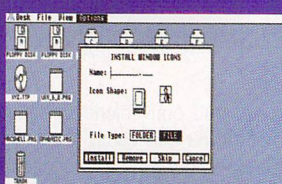
● Once it's fitted inside your ST, you can hardly tell that this internal double-sided replacement drive is there! Well, you can, actually, because you can put double-sided disks in it. And it can read them.



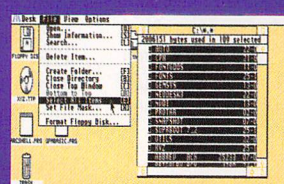
● The new Desktop icons available from within TOS 2.06. Note that program icons can be placed on the Desktop to be selected and run in the same way as with NeoDesk.



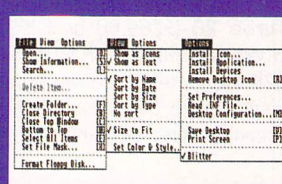
● Use the Install Application option to set up *Arcshell* to run from the Desktop by pressing <F9>.



● You can assign individual icons to programs for easy identification. Apart from the built-in icons held in ROM, there is a file supplied called DESKICON.INF. This can be loaded into a resource file editor such as *WERCS* to design new icons, within limits.



● Handily, you can now select all the files in a window for file copying and deletion purposes. This can also be used with the Show Information option to go through a selection of files, either renaming the files or changing the file attributes to Read Only.



● These are the enhanced menus available from the Desktop with TOS 2.06. Most menu items can be assigned function keyboard shortcuts. There are also new options like the search facility and extra window control functions.

Pagestream
Picswitch 0.7
Protext 5.5
Sequencer One
Stereo Master
Stereo Replay
Supercard
Tempus 2
That's Write
UVK
Write On

Compatible games software tested:

Formula One Grand Prix
Gobliins
Obitus
Race Drivin' ST
Rugby - The World Cup
Top Banana
Vengeance of Excalibur
Videokid
Wolfchild

Some games that didn't work:

Alcatraz
Brides of Dracula
Legend
Pacific Islands
Titus the Fox

Where to go:

Plug-in TOS 2.06 ROMs for the STE are £49.95 from Gasteiner (☎ 081 3651151) and the STFM

upgrade board is £69.95. Contact Gasteiner for installation charges.

Jokta Computing BV (☎ 010 312 8380 38731), a Dutch company, supply the Bitz TOS upgrade for the STFM for £55.00 - £60.00. This upgrade involves some soldering, so it is not an option for the faint-hearted. It enables you to switch between the new and old ROMs, so compatibility is

retained.

We sell the only switchable official TOS 2.06 UK upgrade for both the STFM and the STE - the STE upgrade is the only one available. You keep your original TOS and get the new one installed as well. If you get software compatibility problems, just switch back to your old TOS and carry on as normal. See page 42.

NINETEEN

TOS 1.4 UPGRADE FOR STF/STFM

With each new version of TOS, the ST becomes easier and more friendly to use. STE owners can gloat because they've had TOS 1.4 since the beginning - but if you have a version of TOS older than 1.2 (also known, confusingly, as 1.02) in your STM, STF or STFM, consider the benefits of upgrading to TOS 1.4. Most of the system functions have been improved, disk access times are better and file copying and movement efficiency is vastly increased. Files can be moved instead of copied by holding the <Control> key during copying operations, the system can be reset by pressing <Control>, <Alternate> and <Delete> at the same time, and a blitter chip can be supported - all you have to do is get one installed. Depending on the layout of your machine, you can obtain the TOS chips in either a two chip or six chip set. Both sets should be the same price.

Evesham Micros (☎ 0386 765500) offer the upgrade in two or six chip versions for £40.00. Call for details of availability.

STF Rating: 76%

Silica Systems (☎ 081 309 1111) supply TOS 1.4 for £54.95 including fitting. If you just want the ROMs to install yourself, there is a reduction of 20% - which brings it down to (does a quick calculation) £43.96. Call in advance to check availability.

STF Rating: 74%

MAIN COURSE:

Now it's time to look at some major upgrades which may not come cheap but are certainly able to get your ST performing better than you ever believed possible

TWENTY

ACCELERATORS - HARDWARE:

A hardware accelerator fits snugly inside your machine and can drastically increase the operating speed of your system. They are most useful when you're using processor intensive applications like Computer Aided Design (CAD), desktop publishing, spreadsheets, graphics applications, word processing and any application which performs constant screen updates. However, some games and the occasional serious package (like GFA Raytrace) cannot run at this enhanced speed. Accelerators normally consist of a circuit board fitted over the main 68000 processor, usually by soldering because most CPUs are not in sockets. The normal clock speed of the basic ST or STE is 8MHz, but an accelerator board can increase this to 16MHz, 20MHz, 25MHz or even up to an amazing 50MHz - even faster than the TT runs.

However, accelerators are expensive - from around £130.00 for a 16MHz board to an astounding £2,199.00 for a 50MHz board and 16MBytes of RAM. Most games are not compatible with higher clock speeds, but you can switch most accelerator boards back to 8MHz to retain compatibility.

Turbo 20/16 (£129.99) from the Atari Workshop (☎ 071 252 7775) is a 16MHz 68000 processor and is supplied with EOS (Enhanced Operating System) - a replacement operating system designed specifically to run with the Turbo series of accelerator boards.

STF Rating: 78%

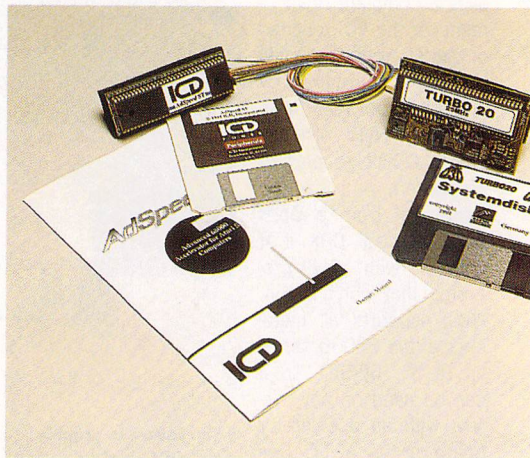
Turbo 16 v2.0 (£189.00) - again supplied by Atari Workshop - is a 16MHz 68000 accelerator with a 32K RAM cache and is supplied with *Turbo ST* software. Programs then run up to 100% faster. There is a fitting charge of £35.00 if you send your machine to Atari Workshop.

STF Rating: 81%

ICD AdSpeed ST (£198.95) from Silica Systems (☎ 081 309 1111), is a 16MHz 68000 accelerator which can switch clock speeds from software. Silica charge £34.95 for fitting.

STF Rating: 80%

ICD AdSpeed STE from Atari Workshop. A new STE compatible 16MHz board which simply plugs into the STE's square 68000 processor socket. It's a fully software switchable board and has a co-processor socket which can take any 68881 or 68882 running at any speed. The AdSpeed STE is so new that it is only available through the *ST FORMAT* offer on page 42. Watch for a review of the board in the next issue of *ST FORMAT*.



● Accelerators? We have the technology to make it faster, stronger, able to kick in doors in slow motion.

Turbo 20 (£269.00 or £299.00 fitted) from Atari Workshop. Runs a 20MHz 68000 processor with 32K cache RAM, meaning programs run up to 250% faster. *Turbo ST* software is included – ideal for use in conjunction with graphics boards.

STF Rating: 81%

Turbo 20/25 (£299.00 or £329.00 fitted), also from Atari Workshop. Runs a 25MHz 68000 processor with 32K cache RAM and programs can run up to 300% faster, making this the fastest 68000 available. The famous *Turbo ST* software is included.

STF Rating: 85%

Turbo 30 (£849 to £2,199 depending on configuration) from Atari Workshop. A 68030 accelerator for the power user, supplied in several options ranging from a 40MHz accelerator with no RAM added, up to a 50MHz processor with 16MByte of extra RAM. The Turbo 30 is designed for the Mega ST or tower systems, it does not fit in an ordinary machine.

STF Rating: 80%



TWENTY one

ACCELERATORS – SOFTWARE

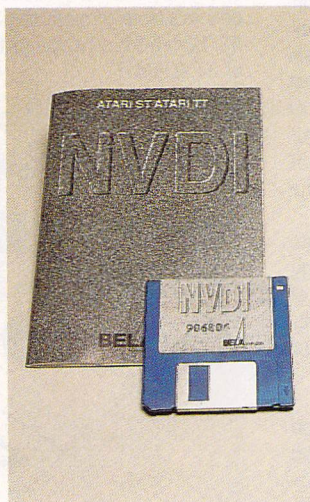
When you can't afford the hardware, try the software solution. A software accelerator is a program which takes over some of the routines built into the ST's operating system and replaces them with its own. The ST's operating system was written in C and compiled (converted) into machine code. Routines written directly in machine code can often run three times as fast as compiled C routines.

The main processes enhanced by a software accelerator are usually the screen update, GEM and other graphics routines. When an accelerator is used, the screen operations can be twice as fast. Some programs do not like being run with a software accelerator in memory, but the accelerators can usually be disabled without any problems.

Quick ST 3.03 (£12.95) from the ST Club (☎ 0602 410241) is fully 68030 compatible, so it can run on the TT as well as on the ST range of machines. The latest version can be configured to load in alternative fonts, Desktop pictures and alternative Desktop patterns. It also increases the speed of various system operations by up to 1,200%.

STF Rating: 88%

NVDI from the Atari Workshop (☎ 071 252 7775). This package supplies a complete replacement for the VDI routines of the ST, speeding up all VDI and GEM routines by a factor of between three and ten. *NVDI* also includes GDOS as part of its system – it can be turned off from a Desk Accessory or CPX if it clashes with any programs that don't like it. *NVDI* supports all members of the 68000 series up to the 68030, so it can be used on any system with an accelerator board or on a TT. See our review next month.



● The future is graphic with *NVDI* – and up to ten times faster.



TWENTY two

HARD DRIVES

You want speed and convenience? A hard drive fits the bill perfectly. You can easily load and save files into applications without having to search for the correct floppy, or having to format a disk because you haven't got one handy. You used to have to take out a bank loan to buy a hard drive but prices are dropping all the time – you can pick up a 40MByte drive for around £300.00. We conducted a roundup of 15 hard drives in issue 27 – see page 64 if you missed that issue.

Protar 40DC, £285.00 for 20MByte version. A large quiet drive with 64K cache to speed up disk access and excellent quality construction. It's also easy to set up. Protar ☎ 0923 254133.

Review: STF 27

STF Rating: 90%

Mega Drive 32MByte, £269.00 from Gasteiner (☎ 081 3651151). Available in sizes up to 100MByte for £429.00. On the large side, but very reliable.

Review: STF 27

STF Rating: 88%

Power 900E Data Injection 50MByte drive is a bargain – heaps of megabytes for only £285.00 from Power (☎ 0234 843388).

Review: STF 17

STF Rating: 85%

Ladbroke 52MByte drive is £389.99 but comes with a 64K memory cache and ICD hard drive utilities included. Contact Ladbroke Computing on ☎ 0772 203166.

Review: STF 27

STF Rating: 81%



TWENTY three

MAC EMULATOR – SPECTRE GCR

Spectre GCR has got the Mac emulator market sewn up. It's hardly surprising because this little grey cartridge is the only Mac Plus emulator worth considering – it can even read Mac-formatted disks directly.

Once you've loaded the emulation software, it's a simple matter of configuring your setup. Second drives and hard drives are fully supported, though you need to reformat at least one of your hard drive partitions to the Mac format before you can use it.

In use, the emulator is actually better than a Mac Plus – it's 20% faster and you get 30% more screen area (the Mac's built-in screen is tiny). You can read and write both genuine Mac disks and Spectre format disks – the GCR's proprietary format which a real Mac can't recognise.

A GCR is great if you need to use a low-grade Mac occasionally, but there are a couple of provisos. First, a mono monitor is useful. Emulating the Mac's 512 x 342 pixel display on a colour monitor leads to loss of information, and the screen updates are slow. Macs access drives much more than STs, so a hard drive is another prerequisite. Finally, plenty of memory is almost a necessity: the absolute minimum is 1MByte, with 2 or 4MBytes recommended since it's not unusual for Mac programs to be 2MBytes or bigger.

What you don't get with a Spectre is Apple's System and Finder software, which are the equivalent of the ST's Desktop and ROM lumped into one. You can't even get to the Desktop without these files. They're copyrighted by Apple and can only be obtained from them – but they are available, and still cheaper than a Mac.

HCS on ☎ 081 777 0751 can supply a GCR complete with Apple ROMs – the core of the emulator – for £300.00.

Review: STF 25

STF Rating: 94%



TWENTY four

MEMORY UPGRADES

No need to wibble on too much about memory upgrades because we told you all you're ever going to need to know in last month's *STF* – go straight to page 64 if you missed it. You can run better, bigger and more complex programs and animations, run the Atari Laser Printer (2MBytes required) and generally enhance your system's all round performance. Many games also benefit from extra memory – in fact, many of the top names are now only released for STs with at least 1MByte of memory.

Xtra RAM Deluxe from Marpet Developments (☎ 0423 711671). This is a SIMMs upgrade board you can fit into any pre-STE machine to increase the RAM capacity to 1MByte, 2MByte, 2.5MByte (on certain machines) and 4MByte. The upgrade is simple to fit and Marpet offer a great back-up service. Prices range from £64.99 for a 1MByte board to £109.99 for the 2MByte and £179.99 for the 4MByte board.

Review: STF 35

STF Rating: 87%

Xtra RAM STE from Marpet Developments (☎ 0423 711671). Plug-in memory for SIMMs for your STE with SIPs (soldered memory) adapters if required. £29.99 for 0.5MByte of RAM, £79.99 for 2MByte and £149.99 for 4MByte. Easy to install and supplied with memory checking software.

Review: STF 35

STF Rating: 86%

Aires 2MByte (£99.90) from Ladbroke Computing (☎ 0772 203166). A 2MByte solder-in board that can be upgraded to 4MBytes at a later date. Very compact but not an upgrade for the faint-hearted to attempt. Call Ladbroke to check on fitting charges.

Review: STF 25

STF Rating: 86%

Zydec 0.5MByte solderless (£49.99) from Evesham Micros (☎ 0386 765500) is a compact plug-in device for the STFM which is simple to install if you have plug-in MMU and Shifter chips. If you don't, it's not so easy.

Review: STF 35

STF Rating: 79%



TWENTY five

MODEMS

With a modem you can get your ST to talk to the whole wide world via bulletin boards services (BBSs). You need a telephone line but the advantages of logging on to a BBS or an information service like CIX (Computer Information eXchange) include being able to download the latest PD software before it gets to any PD libraries, help people with their technical problems, ask for help with your technical worries (send your problems to ST Answers via Bath BBS ☎ 0225 840060), discuss the news, join on-line "clubs" which deal with specialised interests (try Cultmedia on CIX). You can also communicate with a friend who has a modem and transfer data to and from – *Populous* can be played across the telephone line in this way.

Some of the major services such as CompuServe and CIX charge for time on-line and send you a quarterly bill on top of your phone charges. Some of the newer modems now have the facility to send and receive faxes as well as act like a normal modem.

From
99p
a disk

ARE YOU CRAZY? IF YOU DON'T BUY SOFTWARE AT THIS PRICE YOU MUST BE!

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Characters between asterixes show special requirements;

M = Mono Res, *C* = Colour Res, *D* = Double Sided disk, *X* 1 Meg Ram. *S* = Not STE/Rainbow TOS

DESK ACCESSORIES & UTILITIES

U001 Dir printer, RAMdisks, Snapshot screen save, Desk Acc. loader.
U003 Desk. ACCs formatter, calendar, Disk Manager, calculator
U008 68000 Assembler, Address/Mailing List, Autodial Utility
U009 PICS SWITCH 7 changes pics graphics res. Mono/colour emulators.
SWITCHER, 2 progs in memory. FSEL 5.5
U010 STE BOOTUP, boot medium res
U014 ARC file compiler. BI CLOCK set time/date. MONOEMULATOR v5.0.
U016 IBM compatible disk formatter. ARC SHELL v1.91, MEGA formatter
U019 DRFLOPPY, disk editor, SCODE make ASCII for data transfer
U023 Packed with various progs for printing all kinds of labels. *M*
U024 CHK 2.3, All you'd need to know about a disk. IBM MODIFIER, alter DS Atari disks for use on IBMs.
U027 ANTIDOTE, detect & kill most bootsector viruses.
U028 DISKMECH disk analyser/archiver/editor, edit/format sectors etc, full docs. CPANEL
U030 AMC GDOS
U032 MOUSE TRICKS, extensive control over mouse, movement etc.
U033 MX-2 v2.3 a multi-tasking environment, up to 7 concurrent tasks. *D*
U034 DOUBLE CLICK format v3. 03 9/10 sectors, 80/82 tracks,
U035 DEC edit clone, Disk engineer v3.01 do alsorts to a disk via GEM.
U040 AUTO GEM autoboots GEM programs. VC Spreadsheet non-GEM.
U041 ADDRESS LOG, Address book & label printer, disk catalogue.
U046 SUPERKILLER detects 5 viruses, 7 anti-viruses
U050 GEMINI Desktop replacement. English version *DXS*
U052 GEM PLUS, Neodesk variant.
U057 GEMDOS USER GUIDE, full of info about GEM-DOS
U058 ATARI TOS 1.4 bug fixes (STFMs with Rainbow TOS)
U059 XCONTROL: ATARI'S latest TT control panel accessory for all STs.
U063 MEMFILE 2.0: Memory and disk editor with powerful features.
U065 STDCAT v4.0, disk catalogue.
U067 ARCSHELL v3.0, Arc V6.0
U068 HITCHHIKERS PD shareware disk 2.0
U069 ST Zine shell, Disk mag development tool.
U070 SUPERB Intro creator, sprite, pics, text & music
U073 SUPERBOOT V7.0
U075 ST TOOLS, many features
U077 GOODIES, multiple featured desk accessory
U080 JAMES, the desktop butler.

GRAPHIC, FONT AND ART/DRAWING DISKS

A005 PALART, excellent art program with full doc files. *C*
A009 COLUMBIA, Drawing prog, some 3D elements. Studio (*X*), Drawing package. Both German
A012 DOODLE, mono & colour versions. Also some Mandelzoom pics.
A013 ST GRAPH: Comprehensive graph prog, handles bar, horizontal/stacked bar, line & dot charts.
A015 FONTS2, 7 screen/desktop fonts. inc. Columbia, Devoll, Hudson
A018 CANVAS, great art package
A020 PALETTE MASTER, art package, up to 512 colours. *C*
A024 FRACKTAL drawing program from Germany. Mono/Col.
A025 FONTKIT 3.31 *D*
A027 ANI-ST, ex-commercial package, quality animation system
A029 MASTERPAINT drawing package, excellent. Mono & Col.
A030 PICWORKS, enlarge/reformat pics up to 3 times normal size. *M*
A034 PUBLIC PAINTER. *M*
A036 SNOOPY cartoon pics. *C*
A042 ST CAD v2.1, a med/high res CAD package. Full docs. CALC-PLOT, scientific calculator.
A043 THE ARTIST, Great drawing package with many options. *M*
A048 JIL CAD, Shareware. *XD*
A053 MOVIE CONSTRUCTOR, FACE ANIMATOR. *M*
A054 SIMPLE DRAW v3.4, art package. Docs foreign. Med/Hi-res
A059 MASTER DOODLE, shareware art package for the younger user.

CLIP ART

C002 Human figures, cartoons, titles. C013 Humorous clips, Letters A-Z.
C003 Sports figures, July 4th logos. C015 Babies, boys and girls
C010 Occasional Clips, Characters C016 Girls, Scrolls and Occasional
etc. Clips
C011 Loads more fruit, vegetables. C017 Art deco, Baby boy & girl
C012 Herbs & Kitchen parts. C018 Varied Humorous Clips.

WORDPROCESSING & DESKTOP PUBLISHING

W001-006 TEX, 6 Disk Pack, document processor. *M*
W008 1st WORD wordprocessor. Professional fully GEM based
W009 Easy Text v1.2 fully working DTP demo (w010 for DS users)
W015 HYPERTEXT: Shareware prog. Produce professional docs. *MD*
W013 STPAGE, super fast editor
W018 WORD 400, Desk Accessory WPR. Fully featured
W017 ST Writer Elite V4.1 top quality wordprocessor

PROGRAMMING/LANGUAGE DISKS

P001 68000 Assembler
P002 STOS SOUND FX creator.
P008-P10 C LANGUAGE DISKS 1, 2 & 3 of Elementary C, a set of 3 disks.
P012 CPM EMULATOR, CPM-8 v2.0.
P013 CPM UTILITIES for P012.
P017 PROGRAMMING EDITORS; CONTEXT v2, PRO-ED & P-EDIT, full docs.
P019 Nigel Smith's ST 6800 pop-up ref. guide.
P020 SOZOBON C, Great C compiler *D*
P022 SPRITE EDITOR. Create and save sprites.
P023 C TUTORIAL, disk manual.
P026 MKRSC a simple GEM resource construction utility.
P027 MODPAS, Pascal Compiler. *D*
P029 GFA EXPERT, all you need to know about GFA v3 basic.

GAMES DISKS (colour unless stated)

G001 Warzone, Daleks, etc.
G014 SUPERBREAKOUT, 40+ brick types with special features. *M*
G016 NAPOLEON, wargame sim. *M*
G017 EMPIRE BUILDER property developer. LOST TREASURE & JUMPSTER
G018 RUSH, move bricks to create a way out for the ball.
G020 YAHTZEE, popular game.
G021 UPSTART shoot cherries. *S*
G022 COMPANION shoot 'em up in outer space
G025 ENGLAND Team Manager
G027 DIE ALIEN BLOB, a great shoot 'em up, excellent graphics.
G028 TREASURE SEARCH, find the hidden treasure. *SD*
G033 ADVENTURE WRITING SYSTEM
G037 TUNNEL VISION, maze game
G038 BERMUDA RACE 2
G039 INVASION, adventure
G041 Hack! is a D&D adv.
G045 AYATOLLA, terrorists attack. *S*
G046 ROBOTZ, 40 levels, great
G047 FRUIT MACHINE simulator
G056 SLIDE, 3 levs, puzzle. *S*
G063 SOLITAIR 3D graphics. Macpan. Galaxy & Sprengmeister. *M*
G064 ATOMS mentally challenging. KILLERCHES fast & furious. AMMO-
TRACK'S a superb race & blast 'em.
G068 SKIDPAN, motor racing *S*
G069 STOCKMARKET, Wheel & Deal. Galactice Warriors, shoot 'em-up.
G084 FLOYD THE DROID, ultra fast shoot 'em-up. Sampled sound.
G085 AIR WARRIOR, Flight sim
G086 COMPUTER PINBALL, DEVASTATOR, 3D strategy game.
G090 TALESIN, Wolf and 7 kids
G092 FUZZBALL platform game
G093 SHIPWRECK, educational maths with graphics. *S*
G094 ZOG a great blasting game. SUPER SENSORI.
G095 A DUDLEY DILEMMA, adv.
G097 WIZZARD'S LAIR adv.
G098 UNDER BARKWOOD Massive graphic adventure
G100 NAVAL BATTLE, Battleships
G102 CENTAURI, shoot 'em up.
G106 VIRUS, great graphics & sound. *S*
G108 FLYOVER, bombing raid
G109 GLOB, you collect cherry cakes while avoiding pursuers.
G111 TRACKER, you drive your truck through enemy territory.
G112 OVERLANDER, shoot 'em up.
G113 CHANCE, battle the Archons.
G114 ESCAPE FROM THE TOMB OF RA.
G115 MUTANT, reactor out of control, workers mutate.
G116 KEY TO ATLANTIS, underwater scrolling shoot 'em up.
G118 MARS MAZE, platform game.
G119 STEEL, blast everything.
G122 HEDGEHOG, Frogger clone. *S*
G123 THE NAME GAME. *editor.
G128 TARK, great text adventure
G129 BATTLE FOR THE THRONE.
G130 LLAMATRON, a great Shareware game by Geoff Minter. *D*.
G131 VIDEO POKER: Las Vegas poker playing machine.
G132 DERRICK THE DROID: platform, shoot 'em up & puzzle game in one.
G136 PORK II: ZORK send up.
G137 MORIA: Fantasy RPG. *D*
G138 SHOOT 'EM UP BUILDER KIT *D*
G141 DUNGEON: Multi choice fantasy adventure with some humour.
G144 HACKMAN, 50 levels, Pacman clone. *S*
G145 ELVEN CRYSTALS II: Adv
G149 STARMAZE: Various levels, blast alien craft on your way.
G150 A NIGHT ON THE TOWN ADV.
G151 TILE GAME, rearrange the letters. *S*
G152 SOKO, 50 levs maze/puzzle
G153 MEGARIDS, RIPCORN, SPACEWAR, BUGS
G154 BATTLE SCAPE 2 player fantasy war-gaming.
G155 FRUSTRATION, CRISSCROSS.
G156 BACKGAMMON, POKER SO'D
G158 FLY ROBIN, SANTAS WORKSHOP
G159 PENGUIN, excellent, shareware
G160 CROCODILES PASTIMES.
G162 REVENGE OF THE MUTANT CAMELS 1 or 2 players.
G164 SPACE INVADERS, a classic
G165 BLOCKADE, Qix clone
G167 TENNIS great graphics/gameplay.
G169 ROCKFALL, boulderdash type.
G172 ENTOMBED, platform 5 levels.
G176 ARMOURLYTE, horizontal scrolling shoot 'em-up.
G177 GRAY, rotate & thrust.
G178 MAZE, split screen, 2 players + editor, great.
G181 OZONE, platform/puzzle, many enemies, shareware game.
G182 PDBOLO, excellent Arkanoid clone, colour & mono *DX*
G183 INFILTRATION, defeat the aliens, shareware.

APPLICATIONS - Spreadsheets Databases etc.

S001 DATABASE 1, GEM driven database.
S002 ST SHEET, quality spreadsheet *C*.
S005 B/STAT v2.01, sophisticated graphing & stat analysis. *DX*
S007 OPUS v2.2, GEM based spreadsheet & charting program *DX*
S009 WIG DATA, high quality DTB. Full docs.
S011 DOUBLE SENTRY, fully working accounts package (no VAT)
S012 PERSONNEL DTB, Names & addresses DTB.
S013 INVENTORY PRO V2.0 stock control system.
S014 TCOS, tree structured DTB.
S015 ZAPCARD easy to use card type DTB.
S016 SHEET V2, spreadsheet. Similar to Lotus 123. docs.
S017 DATAPLOT, sophisticated data plotting package.
S019 FASTBASE, absolutely brilliant, sophisticated shareware database. Excellent features.

COMMUNICATIONS DISKS

CD001 PACK-ET-TERM v3. 3a, radio package with docs.
CD005 UNITERM v2.0a with auto-dialler & phone book.
CD006 VANTERM 3. 71 & 3.8 great communications package.
CD009 HAGTERM ELITE v3.3 powerful shareware comms package.

MUSIC

M001 COMPOSER, music creation.
M008 KEYBOARD program, various songs & samples.
M012 SINGING CALIFORNIAN RAISONS. *X*
M013 MUSIC WRITER, create music.
M016 CASIO CZ SOUNDS & EDITOR
M020 XBIOS Music Const. Kit.
M021 PERCUSSAMAN, 4 track, 16 instrument, synthesised sequencer.
M022 SOUNDTRACKER PLAYER & MODULES. D_DREAD1, D_DREAD 2, PAT_MIX, RVB_DEMO, SPREAD.
M025 MFF Music design package. *DXM*
M026 CHORDEX tool for learning major/minor chord shapes.
M029 MIDI v2.0 monitor. Med/High res. Shareware EX800 v2.0.
M031 DBRK4802, daybreak step time sequencer v.3.
M035 ACCOMPANIST 2.4, 16 voice shareware sequencer.
M040 EDSYNTH 1.2 music synthesiser.

EDUCATIONAL

E002 WORLD MAP GAME.
E004 Spelling Made easy
E005 REBUS WRITER, design & print rebuses. Samples included.
E006 BARNYARD, pair the animals from memory. *C*
E007 WELCOME TO CHEMISTRY V2. *S*
E008 CHUNNEL, A French to English & vice-versa tutorial game. *C*
E010 PERFECT MATCH, PENTOMINOES
E011 TYPING TUTOR (2) with full documentation.
E013 MATHS MADE EASY
E014 KIDGRAPH, KIDMUSIC, KIDPIANO, KIDPOTATO *C*
E015 KIDPUBLISHER, KIDSONG
E016 DOT 2 DOT, includes creator.
E019 SOLAR SYSTEM GEOGRAPHY
E020 GEOGRAPHY TUTOR
E021 ZOO MAKER, you're asked questions, the computer tries to guess the animal.
E022 ME FIRST, BUTTERFLY IN THE PARK.
E023 COLOURING BOOK.

GENERAL

F003 SKY MAP, display over 1500 stars.
F005 CONSTELLATIONS. A comprehensive astronomers disk *M*
F006 PLANETARIUM, get stats on almost any planet or moon.
F009 THE PLANETS. *D*
F012 AUTOROUTE, working demo covering the south of England.
F013 POOLWISE V3.5, pools predictor. MED RES.
F016 ST TOUR, guided tour.
F017 YOUR SECOND ATARI MANUAL.
F018 NEWGEN V4, shareware, 10 record limit.
F020 ST TECHNICAL MANUALS.
F021 BUSINESS LETTERS, 100 business style letters in ASCII code.
F022 ASSISTANT CHEF, 142 recipes + add your own.
F023 ASTRO 22, Astrology
F026-28 A ROMAN MYSTERY, graphic art images, Roman magazine, Graphic database with a murder investigation, plus more *3 disks*
F029 COMPACT OFFICE MANAGEMENT, excellent accounting program for small business' & sole traders. Comprehensive. *D*.

DEMO'S

D005 THE DEFINITIVE DEMO. *D*
D006 SLATATANIC CULT, Music Demo I & II. *D*
D007 ASTERIX DEMO.
D008 BOMB THE BASS.
D009 TRANSYLVANIA DEMO. *D*.
D010 SOUND CONNEXIONS. *D*.
D011 THE NEW YEAR DEMO. *D*.
D012 STINGRAY DEMO.
D017 COUNTERPOINT DEMO.
D018 CUDDLY DEMOS *S*.
D019 MASTERSOUNDS DEMO.
D020 ROBOMIX DEMO.
D021 STAR WARS DEMO.

PRICING

1-10 £1.25 each, 11 & over 99p each

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GULF TORNADO £1.99 (Not PD)
Great scrolling shoot 'em up. Blast those Migs and Missile launchers
with your fighter/bomber. 1 or 2 players.

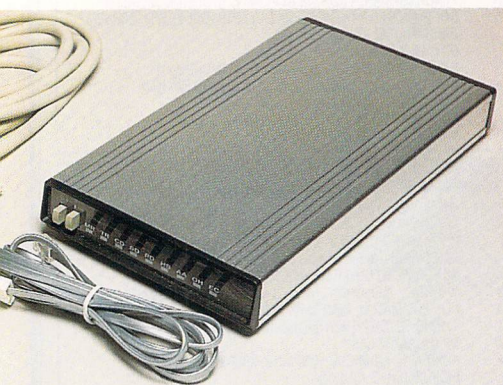
SupraModem 2400 from Supra (☎ 081 566 6677) is a Hayes-compatible 2400 baud modem. Hayes-compatible means that 99% of comms software (or thereabouts) controls it without any problems. At £119.99 this is now one of the cheaper 2400 baud modems on the market.

Review: STF 31

STF Rating: 90%

TKR Fax Modem (£229.00) from Atari Workshop (☎ 071 252 7775) can handle up to Group 3 standard fax communications. Using the supplied software you create your fax message on-screen with the ability to import graphics and text prepared in other packages, so you can create letterheads and logos to be used in a fax. The software automatically converts the data to fax format for transmission and converts faxes received into a format your ST can use. The modem uses MNP5 error correction and also doubles as an ordinary modem.

STF Rating: 84%



● What we have here, illustratively speaking, is a Fax-modem combination situation, communication-wise, facilitating the interchangeability of data upload and contrariwise. Want to do lunch?

SupraModem 9600 Plus (£299.00) from Supra (☎ 081 566 6677). A 9600 baud modem enabling high speed data transmission and reception. Like all Supra modems, a very reliable unit.

Review: STF 31

STF Rating: 84%



TWENTY six

MONITORS: COLOUR, MONO AND MULTISYNC

If you are going to use your machine seriously, then you need a monitor – a TV screen's image is not good enough for detailed work. Most applications require a minimum of medium resolution colour to operate, while many require a high res mono monitor.

The problem with the ST is that it needs two monitors to show all three resolutions – a colour one for low and medium res work and a mono monitor for high res. To display all three resolutions on one screen you need a multisync monitor, but these can be even more expensive than buying two separate monitors.

Atari SM144 high res monitor (£119.95) from Evesham Micros (☎ 0386 765500). This is Atari's replacement for the SM124 and SM125 monitors and has a beautiful crystal-clear paper-white 14 inch display. Absolutely essential for high res work such as DTP and CAD. It has a tilt and swivel base which can clip neatly onto a TT or Mega STE.

Philips CM8833 Mk 2 (£219.00) from Swift Micros (☎ 0582 476257). The stereo version of the Philips

14 inch monitor is still going strong and cannot be beaten for its low and medium res colour display. Ideal for games and graphics.

Review: STF 31

STF Rating: 90%

Atari SC1435 Colour (£249.99) from Ladbroke Computing (☎ 0772 203166). The long-awaited 14 inch replacement colour monitor actually uses the same guts as the Phillips CM8833 monitor. Stereo sound capability for STEs and above, along with a tilt and swivel base.

Eizo Multisync (£586.33) from Atari Workshop (☎ 071 252 7775). A colour multisync monitor which means you can use all three ST resolutions on one screen. Essential for those with limited deskpace who need to be able to swap between colour and mono at the flip of a switch. In conjunction with the Crazy Dots graphics card this monitor is perfect for use with Calamus SL.

● Don't miss next month's issue of *ST FORMAT* for a comprehensive monitor roundup!



TWENTY seven

MONITORS: LARGE SCREEN

Large screen monitors for the ST are used mainly for graphics, Computer Aided Design or desktop publishing applications and are usually high res mono only. The large screen size – either 19 inch or 21 inch – enables an A3 size image to be shown. (Two pages of *STF* added together is about A3 size.) You need a graphics card to enable you to make use of the bigger screen area – the *Titan Graphics Card* or *Crazy Dots* card are the two most common. Large screen monitors are expensive beasts, but are becoming more popular.

Protar ProScreen TT 19 inch monitor (£732.00 for the TT, £979.00 for Mega ST or Mega STE versions) from Protar (☎ 0923 254133). This high res mono monitor has been designed specifically to run with the TT. The Mega ST and Mega STE can be run with an interface card provided with the monitor. All GEM programs run properly in full screen mode (1,280 x 1,024 pixels) while some programs have to be emulated on a SM144 resolution screen. An .INF file in ASCII format can be created to tell the system which screen mode you need for a particular program.

Eizo 6500 Flexiscan 21 inch mono monitor (£1,291.33) from the Atari Workshop (☎ 071 252 7775) sports a resolution of 1,660 x 1200 pixels, giving almost six times the screen area of an SM144 high res monitor. This is absolutely perfect for CAD or DTP work. The *Titan Reflex* and *Crazy Dots* cards can both be used with this monitor.

● Make sure you don't miss the full reviews of these monitors in next month's *STF* – see page 64.



TWENTY eight

PC EMULATORS

Why should you bother to install a PC emulator in your machine? Well, there is a fair bit of software available for the old PC, so you might as well take advantage of it on your ST without having to buy a separate machine. PC emulators mean you can use

your ST's peripherals like hard drives, mice and printers as if they were connected to a "real" PC. Because all emulators are switchable, you do not lose compatibility with ST software and hardware – you simply run a boot disk to switch on the emulator, load in MS-DOS and run the software you want.

Because the PC emulators available are all fitted internally in the ST, it is impossible to add PC cards to the system. These are peripherals fitted internally to PCs to add extra capabilities to what is, frankly, a pretty basic machine – an internal modem, a hard drive, a sound board, a network card and so on. This makes it impossible to run full colour VGA PC games or any colour high res graphics software on an ST. However, high res mono VGA is supported by most PC emulators. Basic PC sound output is no more advanced than the Spectrum's beep.

There are two main emulators on the market: the *PC/AT Speed* series and the *ATonce* series. The *PC* and *AT Speed* emulators are supplied by Compo (☎ 0480 891819) in three versions.

AT Speed (£149.00) uses an 80286 processor to give AT emulation and mono EGA and VGA emulation. *AT Speed C16* (£229.00) gives AT emulation with a clock speed of 16MHz and has a maths co-processor socket enabling an 80C287 to be added to speed up processor intensive applications such as CAD packages. It is also supplied with DR-DOS 5.0.

Review: STF 25

STF Rating: 82%

PC Speed (£99.00) is the base model and uses a NEC V30 chip which emulates an IBM XT compatible and offers four colour CGA mode, CGA mono, Hercules and Olivetti mono screen modes.

Review: STF 25

STF Rating: 74%



● (Electrical shop salesman voice:) Yes, indeed, sir, these PC emulators can give you DROS on your ST. Take it from me (smarmy grin), you want DROS all right. (Oily smirk.) Will that be cash or charge?

All STFM versions of the emulators have to be plugged into a socket soldered to the 68000 processor. *PC Speed* is supplied in separate versions for the ST and STE and a plug-in adaptor for the STE (£25.00) is available for the two *AT Speed* models. There are also adapters to connect the boards to the Mega ST (£25.00) and the Mega STE (£49.00). The *ATonce* by Vortex comes in three models, all available from Silica Shop (☎ 081 309 1111).

ATonce (£149.00) is an 8MHz 80286 AT emulator giving CGA colour, Toshiba T3100, Olivetti and Hercules mono screen modes.

Review: STF 25

STF Rating: 85%

Atonce Plus is a 16MHz version of the normal ATonce board, available for £189.99.

Review: STF 25

STF Rating: 82%

The last emulator is the **ATonce-386SX** (£349.00), which has provision for 1MByte of fast RAM and a co-processor. The 386SX runs at 16MHz and supports mono EGA and VGA graphics. There are plug-in adapters (£26.00) to enable fitting to Mega ST and STE machines. Don't miss our review next issue.



TWENTY nine

PRINTERS

Anyone who intends to do any serious work must, at some point, consider buying a printer. A printer is a necessity for practically every business or graphics application you can think of – after all, what's the point of writing a letter or creating a graphic masterpiece if you can't get it off your screen? The problem is that there are many types of printer you can choose from: 9-pin dot matrix, 24-pin dot matrix, inkjet and laser. The type of printer you choose should reflect your personal requirements – you wouldn't need a laser printer if you only used it for printing out the occasional read-me file from a disk, for instance, but if you are intending to start a DTP bureau you need something a bit better than a 9-pin dot matrix. Obviously, the higher the spec of the printer, the higher the price.

Laserjet 3P from Hewlett Packard (☎ 0344 369369) is one of the best laser printers and gives much finer detail than most lasers because of the built-in "resolution enhancement" software. Most lasers have 0.5MByte of memory to build up page information, but the Laserjet has 1MByte. Very quick and easy to use, its list price is £1,291.00 – but shop around for better deals.

Reviews: STF 30, 31

STF Rating: 91%

The Deskjet 500 from Hewlett Packard (☎ 0344 369369 £586.00) is probably the most popular inkjet printer available and is now spawning a clutch of clones which use the Deskjet's innards. The Deskjet offers 300 dots-per-inch resolution – equal to laser output quality without the high cost of laser consumables like toner cartridges. Deskjet ink refill cartridges range in price from about £12.00 to £18.00 and output can be printed onto plain paper. A sheet feeder is built in as standard, enabling 100 sheets of paper to be fed in automatically – on other printers, a sheet feeder can cost up to an extra £75.00. If you shop around you can get it for about £360.00.

Review: STF 25

STF Rating: 90%

The KX-P1123, £311.00 from Panasonic (☎ 0344 853195), is an excellent 24-pin dot matrix printer. 24-pin printers are capable of printing out at 360 dpi – greater than a laser printer's resolution. The main drawback with dot matrix printers is that a "banding" or striped effect can be seen when printing areas of solid colour, although this is less noticeable on a 24-pin printer than on 9-pins.

Review: STF 31

STF Rating: 90%

Star LC-200 Colour Printer (£304.00) from Star Micronics (☎ 0494 471111) is a 9-pin colour printer which comes supplied with both colour and black ribbons to cater for all requirements. Although only a 9-pin, this printer is capable of producing excellent colour screen dumps.

Review: STF 17

STF Rating: 80%



THIRTY

SOUND SAMPLERS

Sound samplers take a sound from an audio source and convert it to digital data by means of an analog to digital converter. They are small units which usually plug into the cartridge port of the ST. There are two main uses for samplers: they can take sounds from a tape or compact disc and use the resulting data for sound in games, or they can be used in sequencers to produce records. Sampling is heavily used in modern music. The price of samplers has dropped dramatically recently – you can get stereo samplers for under £40.00. Production of samplers is dominated by Audio Visual Research.

Stereo Replay 8 by AVR (£79.95 from Microdeal ☎ 0726 68020) is a superb device offering high quality 8-bit stereo sampling and stereo output on all machines.

Review: STF 18

STF Rating: 95%

Stereo Master by AVR (£39.95 from Microdeal ☎ 0726 68020) is the cheapest stereo unit available. There are no outputs on this device, so any recording of samples has to be made via the ST's own audio output – an STE or above is recommended because of its phono outputs. The software is simple to use.

Review: STF 34

STF Rating: 77%

DESSERT

You've got your ST working just like you always wanted. Now it's time to take a look at some of those frivolous improvements you can make to take it that little bit further



THIRTY one

EXTERNAL CONTROL DEVICES

If you want to link your machine to the outside world so your ST takes control, you have to go for either the Atari Robokit or the Switchsoft Input/Output Port. Both provide output to external hardware and can send a series of signals to control things like time-lapse photography, automatic switching of lights at pre-determined intervals, burglar alarms, robot arms and so on. The only drawback is that you have to set up control of the interface by writing your own BASIC programs, but this also means you can design the software to perform exactly as you wish.

Atari Robokit (£49.00) from Silica Systems (☎ 081 309 1111). This kit is a cartridge port based device designed for use with Technical Lego and is not really suitable for more advanced applications. In short supply now – check with Silica for availability.

Review: STF 5

STF Rating: 82%

The Switchsoft Input/Output Port (£26.95) is a more versatile device, enabling a much greater diversity of projects to be tackled. With a total of 13 input and output ports, software commands supplied in several versions of BASIC and a range of projects and kits available, it is just what you need to get started with hardware projects. Contact Switchsoft on ☎ 0325 464423 for details of their range of kits.

Review: page 112

STF Rating: 76%



THIRTY two

GRAPHICS CARDS

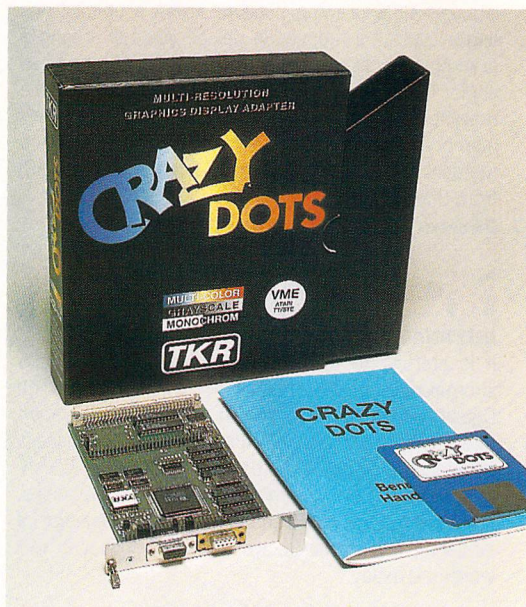
A graphics card is used to increase the resolution and palette of the ST. High resolution mono cards are normally used in conjunction with CAD or black and white DTP programs such as *Calamus* or *Time-works*. Colour cards are available to turn your machine into a professional graphics workstation capable of displaying 256 colours on-screen from a palette of 16.7 million! These cards are usually only for the Mega ST, Mega STE and TT, but some cards have STE adapters available.

Reflex Graphic System at £292.58 from Titan Designs (☎ 021 415 4155) can be configured to display several modes from the normal 640 x 400 pixels on an SM144 to 1,024 x 1,024 on an A3 monitor. It comes complete with all driver software and a Desk Accessory control panel. This card cannot be used on an STFM, but an adapter is available for the STE for £29.96.

STF Rating: 87%

Crazy Dots Colour Graphic Card (£389.00) is also from the Atari Workshop. This card gives you a palette of 16.7 million colours from which 256 can be displayed at a time on a suitable colour monitor, or 256 greyscales on a mono high res monitor. You can get resolutions of up to 1,664 x 1,200 pixels in 16 colour mode. The card is supplied with 1MByte of video RAM and other graphics expansions can be added at a later date. The hardware is compatible with all properly written GEM programs and is suitable for use with *Calamus SL*, the colour version of *Calamus*. Watch for our review next issue.

STF Rating: 82%

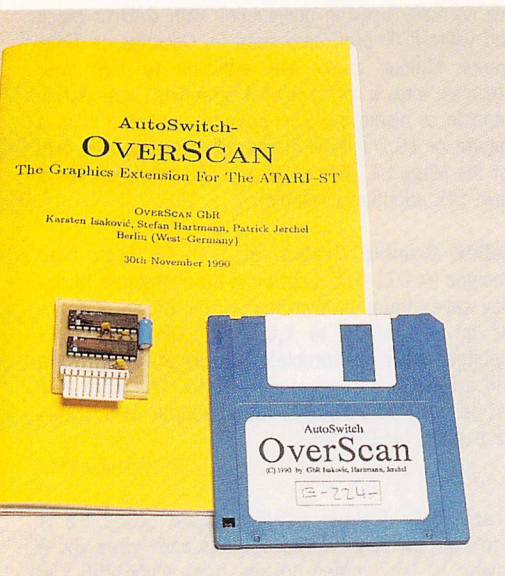


● You know the most frustrating thing? It's not being able to get the colour of those eyes just right. But now, with *Crazy Dots*, you can choose from over 16 million colours. Or discover why it's called crazy.

Autoswitch Overscan (£49.50) from the Atari Workshop (☎ 071 252 7775). The Overscan can only be used on the older Atari machines – it is not compatible with any machine with TOS greater than v1.4 – that is, the STE and above. This upgrade works in all resolutions and increases the resolution of any monitor. The SM144 resolution is increased to a minimum of 672 x 480 pixels, while the SC1435 is increased

to 752 x 280 in medium resolution. It needs to be fitted by a competent electronics person, but it is a cheap and effective way to increase the resolution of your existing monitor.

STF Rating: 79%



● Change up to *OverScan*, and you too can make more resolutions, come January... What? Oh. Er, you can see more dots before your eyes. Or something.



THIRTY three

GRAPHICS TABLETS

A graphics tablet is a large flat drawing-board-like thing which enables you to "draw" diagrams directly into any GEM drawing package using a special pen and a "puck," a mouse-like device you roll around a drawing and click on points where lines join or at an angle. In this way, you can build up an image of the drawing you are tracing directly into your machine's memory. The only tablet available for the ST at the moment is the **Mark 4 Cherry Digitiser** (£534.63) from Cherry (☎ 0582 763100).

Review: STF 29

STF Rating: 88%



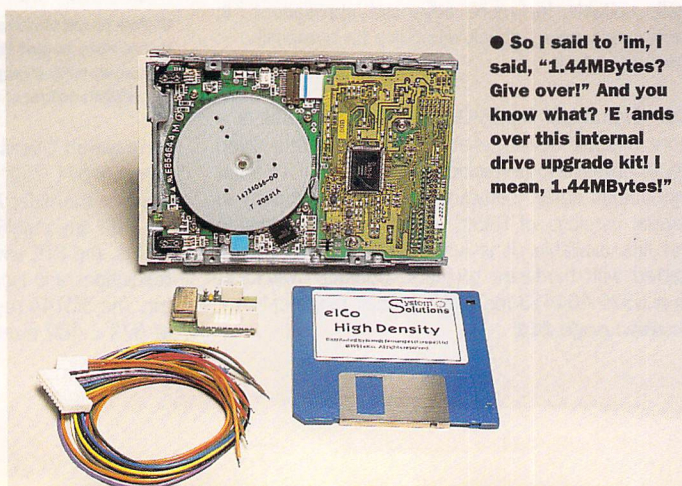
THIRTY four

INTERNAL DISK DRIVE UPGRADE TO 1.44MBYTE

It is starting to make more sense to upgrade the internal drive of your machine to a 1.44MByte High Density (HD) drive. Apart from giving you extra storage capacity on each HD floppy disk, if you have a PC emulator installed you can run all the new PC software that is now commonly supplied on HD disks. Installing the upgrade requires a good knowledge of soldering and basic electronics savvy, but it is well worth the outlay.

The **Atari Workshop** (☎ 071 252 7775) have a HD internal drive kit available for £99.99, which includes the upgrade module and a high density drive. If you want to supply your own HD drive, the HD module is available for £39.95, including all the formatting software. Atari Workshop are working on an external HD drive which should be available in the next few months.

STF Rating: 87%



THIRTY five

KEYBOARD ENHANCEMENTS

The bog-standard Atari STFM and STE keyboard has always been regarded as a bit of a turkey by people who have had the (mis)fortune to have used PC-contemptible machines. Although the keyboard is not that bad, it could be better, so a few companies have provided some enhancements to improve the "feel" and response of the old clackerboard.



● **MENSA Entrance Exam, part 57: what's wrong with this ST? Take your time. Hint: you could type on it, but you wouldn't get the result you expect. That's right, the "Q" and the "W" are transposed. Well done!**

Key Clicks (£29.95) from Atari Workshop (☎ 071 252 7775) are a set of small rubber mushrooms that fit between the keyboard and the actuator beneath. They magically transform the feel of your keyboard and are simple to fit.

STF Rating: 78%

Replacement Keytops (£39.95) from Atari Workshop (☎ 071 252 7775) are a complete set of keys to replace your old ones. Simply remove all your old keytops from their posts and press on the new ones.

STF Rating: 72%



THIRTY six

MICE AND TRACKBALLS

Why do you need a new mouse? Well, the Atari mouse is not exactly the best beastie to be plugged into your machine – it's rather slow and unresponsive, and those buttons! By replacing it with a higher resolution device, you can rush round the screen at breakneck speed without having to expend precious energy in moving the mouse so far across the tabletop. Most replacement mice fit easily into the palm of the hand, making them a pleasure to use.

Another alternative is a trackball, which is basically an upside-down mouse. This too can enable you to whizz around the screen, although accurately placing the pointer can be a problem. The main advantage with a trackball is that you do not need bags of room to use one.

The **Alfa Data Crystal Trackball** (£39.95) from Gasteiner (☎ 081 3651151) is one of the few on the

market – the ball lights up either red or green depending on which button is pressed. Psychedelic.

Review: STF 34

STF Rating: 92%

Naksha (☎ 0458 74011) probably supply the most famous replacement mouse on the market, offering 280 dpi – that's dots per inch to you – enabling edge-to-edge screen movement in less than three inches of mouse movement. Uncanny. The Naksha mouse costs £28.99.

Review: STF 31

STF Rating: 88%

That's Mouse from Compo (☎ 0480 891819) is another upgrade bargain at £19.99 with a resolution of 290dpi.

STF Rating: 81%

The **Power Mouse** is a tad cheaper at £14.95, but still offers greatly improved performance. Available from Power Computing (☎ 0234 843388).

Review: STF 31

STF Rating: 79%

Power Computing (☎ 0234 843388) also supply an **optical mouse** for the ST which doesn't use a ball at all – it shines a beam of light down onto a special mouse mat with a grid printed on it. This light is then detected by an optical sensor. The mouse has a high resolution of 300dpi and is supplied complete with mouse mat for £29.95.

STF Rating: 78%



THIRTY seven

SATELLITE RECEIVERS

A subject for the enthusiastic hobbyist here. ICS (☎ 0903 731101) can supply a specialist receiver, de-coder, amplifier and software to enable you to set up your own home weather centre. Using the **Met-2 Satellite Receiver** (£939.94), you can display live pictures from the Meteosat weather satellite on your machine and beat Michael Fish at his own game.

STF Rating: 78%



THIRTY eight

SCANNERS

If you are working in the high res graphics field, you really need a scanner so you can copy graphics directly from the printed page to the memory of your ST (subject to copyright, of course). You can use scanners to scan black and white line art, photographs and text. All these can be used in your own work, and text can even be loaded into a text editor after conversion by a suitable Optical Character Recognition (OCR) package, so you can hack it about just as if you'd typed it in. Scanners come in three types: small hand scanners, A4 hand scanners and flatbed scanners. The most popular and the cheapest are the small hand scanners.

Datascan A4 Pro (£499.95), also from Paandal. This is an A4 hand scanner with a motorised paper feed unit to enable steady scans to be obtained.

Review: STF 23

STF Rating: 96%

Golden Image Scanner (£149.00 from Ladbroke ☎ 0772 203166). A good small hand scanner supplied with the Migraph's *Touch-up* software.

Review: STF 18

STF Rating: 95%

Datascan Pro Hand Scanner from Paandal (☎ 0234 857777, £124.95). This unit is one of the



**YOU KNOW THE
COMPUTER
YOU'VE ALWAYS
DREAMT
ABOUT?**



THIRTY nine - FORTY eight



TEN INDISPENSABLE COMMERCIAL SOFTWARE PACKAGES

1 *GFA Basic v3.5*, £34.95 from GFA Data Media (☎ 0734 794941), is just about the fastest version of BASIC available for the ST. Couple it with the compiler (£24.99) and you can create fast stand-alone programs which can be run from the Desktop. Perfect for creating Accessories and utilities, *GFA Basic* has been used to produce hundreds of Public Domain and commercial programs and utilities, including the popular comms program *Vanterm*. *GFA Basic 3.5* was featured as one of the programs that was yours on *ST FORMAT*'s second Cover Disk with issue 35.

Reviews: **STF 30, 31**

STF Rating: 95%

2 *C-Lab Notator*, £550.00 from Sound Technology (☎ 0462 480000), is just about the best sequencer and score printing package around for the ST. A touch on the expensive side but so well featured it is well worth the asking price.

Review: **STF 30**

STF Rating: 92%

3 *STOS Basic* from Mandarin (☎ 0625 859333) is probably the most popular programming language available for the ST. It is the only non-games program to feature in the top ten software sales charts. Designed for graphics and sound manipulation, *STOS* is ideal for creating games from BASIC. To save £42 on the *STOS Collection*, including *Maestro* sound package, 600 sprites and compiler, see page 94.

Review: **STF 32**

STF Rating: 92%

4 *Superbase Personnal 2* from Oxxi (☎ 0753 551777, £112.12) is one of the best databases around for the ST. Movement through the database files is simply accomplished by a set of control buttons across the bottom of the screen reminiscent of a video recorder. This database covers every need of the home user and is good enough to be able to cope with the demands of a small business as well.

Review: **STF 19**

STF Rating: 91%

5 *Ultimate Virus Killer* from Douglas Communications (☎ 061 456 9587, £9.99) is another program which should be part of everyone's library of utilities. It can recognise and destroy over 50 viruses and repair hundreds of commercial game and program disks. Updated every few months to keep track of the latest viruses and software around.

Reviews: **STF 31, 34, 36**

STF Rating: 91%

6 *Home Accounts 2* from Digita (☎ 0395 270273, £54.99) is a superb package for keeping track of income and expenditure. Designed to be easy to use, it can be used to set up automatic deduction of standing orders and other regular payments without entering them individually every month. Also a very good buy for small businesses.

Review: **STF 31**

STF Rating: 90%

7 *Deluxe Paint* from Electronic Arts (☎ 0753 549442, £59.95) is the ST version of the

famous Amiga games machine art package and is one of the best programs of its type available. Lots of features, including animation facilities, 4,096 colour support on the STE and the ability to load .IFF format pictures.

Review: **STF 30**

STF Rating: 88%

8 *Knife ST* from Hisoft (☎ 0525 718181 £34.95) is a comprehensive disk editor and recovery program. Using this utility, you can alter the data on any disk - both floppy and hard drive - to salvage files and data which has been damaged or accidentally erased. The software is simple to use if you follow the detailed information in the manual. This program can be a life saver in a disastrous situation.

Review: **STF 31**

STF Rating: 86%

9 *Fastcopy Professional* is the commercial version of the popular *Fastcopy 3* Public Domain program which has been so popular. This is a disk copying and for-

matting program which offers a host of other features, including a streamer option for hard drive backup and the ability to format high density (HD) disks on the Mega STE and TT machines. *Fastcopy Pro* is only available from the ST Club (☎ 0602 410241) and costs £24.95.

Review: **STF 34**

STF Rating: 83%

10 *Multidesk* (£29.95 from the Atari Workshop ☎ 071 252 7775). This is a marvellous Desk Accessory which gets around GEM's limit of six Desk Accessories. This program enables you to load any Accessory from within a GEM program at any time, so you don't have to re-boot your system if you wish to load a spell checker or a utility while in a program. There is no limit to the number of Accessories you can load apart from the amount of memory you have available. The latest version enables you to unload Accessories as well.

Reviews: **STF 5, 31**

STF Rating: 80%

best available and is very easy to use with the supplied software. Scanned files can be saved in TIFF, .IMG or Degas formats.

Review: **STF 15**

STF Rating: 93%

The Zydec Handy Scanner from Evesham Micros (☎ 0386 765500, £99.99) is a badged Daatascan Pro unit for £25.00 less. The software supplied is the Daatascan Pro version, as is the cartridge. Now upgraded to work on the TT and Mega STE.

STF Rating: 93%



FIFTY

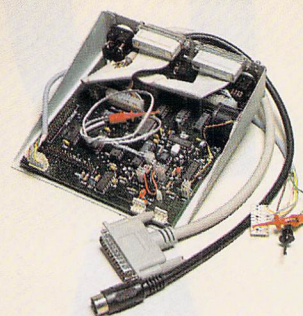
TOWER EXTRA: THE OCTOBUS

The Octopus (£129.95) is an add-on specifically designed for use with the Lighthouse Tower unit. It is an expansion unit which provides the capability to run four floppy drives from the Desktop, and enables both 3.5 inch and 5.25 inch high density drives to be used. Both colour and mono monitor sockets are provided, so they can both be plugged in at the same time with electronic switching between the two. There is a 15-way multisync monitor socket, an audio

amplifier and two buffered centronics ports, one of which is bi-directional, allowing input as well as output. All ports can be configured via a Desk Accessory and driver software. The Octopus is available from the Atari Workshop (☎ 071 252 7775).

STF Rating: 85%

● The Octopus adds 142 ports on a lemon meringue, or 50p back on the E4 economy size.



FORTY nine

TOWER CASES

The main problem with adding extra bits to an STFM or an STE is the lack of space in the case if you wish to add more than one device. You just have to transfer the entire innards of the machine to another case which has room for extras such as hard drives, network cards, accelerator boards, graphics cards, internal fax/modem and extra floppies.

The Lighthouse Tower case from the Atari Workshop (☎ 071 252 7775) is a large PC-style tower where you can put the main board of the ST and every peripheral you're ever likely to need. It has space for three floppies and one hard drive, brings every port to a more accessible position and can be tucked away under your desk so there are no more cables all over the place. A separate keyboard case is provided for STFM and STE owners and Mega ST, Mega STE and TT owners can use their original keyboards. The tower comes in several versions: £169.95 for the Mega ST version, £199.95 for the STFM and STE version, £239.95 for the STM version and £169.95 for the Mega STE and TT version.

STF Rating: 82%

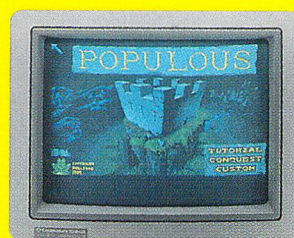
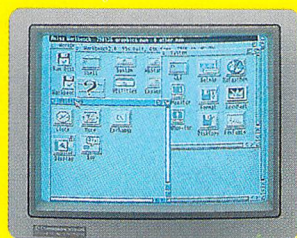
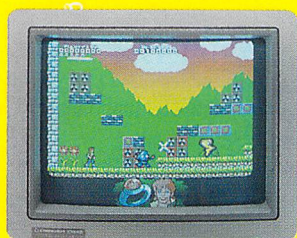


● We apologise for the caption above. It was written by this new Lighthouse Tower ("Your Metal Pal Who Can Fit Every ST Add-On In, No Sweat"), which unfortunately has no Automatic Caption Writing Software fitted, because, er, there's no such thing, actually.

WELL, STOP DREAMING



THE NEW AMIGA 600 HAS ARRIVED



COMPLETE WITH FREE "AT HOME" MAINTENANCE FOR 1 YEAR

PACK INCLUDES DELUXE PAINT III[†], WORKBENCH AND ONE GREAT GAME[‡]. AMIGA 600 £399.99^{*}; AMIGA 600 HD £499.99^{*} (Prices include VAT).

Yes, this is reality. And yes, the world's best-selling home computer has been improved.

As soon as you get your hands on the new Amiga 600, you'll know you're dealing with something special. A lot more compact than the Amiga 500, yet packing even more punch, this machine is all you'd expect a 90's computer to be.

For example, it incorporates the very latest "Smart Card" technology which means quicker and easier loading than ever before.

What's more, the Amiga 600 will also run existing Amiga software titles – by far the largest range available for any 16-bit machine.

Of course, coming from the legendary Amiga family, the outstanding graphics, mind-blowing stereo sound and 1Mb RAM (expandable to 8Mb) will come as no surprise to anyone.

But if you really want to get serious, the unique Amiga 600HD with its impressive built-in 20Mb hard disk is for you.

And as if all that wasn't enough, we'll even come to your own home to repair your machine in the unlikely event of a malfunction.

AMIGA[®] 600[™]
Commodore

Wake up to the Commodore Amiga 600. It's everything you've been waiting for.

Call free on **0800 68 68 68** for your local Amiga stockist.

Available at most quality computer outlets. *Monitor not included. Smart Card titles and CD ROM upgrade to be released soon. †Software not included with Amiga 600HD.

SOUP UP YOUR ST!

You've seen how you can improve your ST – now you can get on and do it! In conjunction with Atari, System Solutions and Compo Software, we're offering you a unique opportunity to give your ST a full service and get your hands on one of these amazing upgrades at the same time. It couldn't be easier or cheaper – book yourself a holiday and we'll do it all for you!

WHAT'S ON OFFER

Service machines

Discover what's going on under the hood of your ST without invalidating its warranty. Here are all the things we'll do:

- Run full Atari diagnostics
- Dismantle

Clean the case, removing any visible stains
Brush and Hoover the insides
Replace any missing screws
Run a further 40 point test
Provide an ST FORMAT certificate showing details of your machine such as TOS version, memory size and any added extras installed inside.

Special STF price: £24.99

Service your monitor

Worried about your monitor? We'll test, clean and possibly refocus it for you.

Special STF price: £7.50

Repairs

We'll give you a fixed price quote for any necessary repairs and include the standard service listed above. At the same time we'll also discuss any possible inter-

FOR STARTERS

Blitter chip

To maintain compatibility with some STE software and to ensure you get the most of graphics intensive software, install a blitter chip in your ST.

Special STF price: £49.00

Cleaning Kit

To bring your ST up bright and sparkling, invest in this 400ml can of industrial strength cleaner, not normally available in the shops – it can even clean your printer.

Special STF price: £4.99

Internal single-sided to double-sided disk drive

If you haven't already done so, it's about time you up-

graded your internal disk drive – there's no need to miss out on the latest software!

Special STF price: £45.00

TOS upgrade

Upgrade your TOS to the latest 2.06 – only found in the Mega STE at the moment. This switchable upgrade leaves you with your existing TOS version with-

MAIN COURSE

ADSpeed

Truly boost the power of your ST with this hardware accelerator, which increases the speed of an ST from 8MHz to a staggering 16MHz. If you've got an STE, get **ADSpeed STE**, which adds a co-processor to your machine, speeding up maths functions – crucial if you use CAD programs regularly. This is the only place you can get this STE version, so don't hesitate!

ADSpeed ST: £179.95

ADSpeed STE: £199.95

Fax Modem

In modem mode, you can talk to bulletin boards around the world. Then you can switch to a fax mode to send pictures or text to anyone with a fax machine.

Special STF price: £229.00

Memory upgrades

Take the pain out of upgrading your ST – let someone else do it for you! In a special deal with Atari, we can upgrade your ST without invalidating its warranty. All upgrades are done using Frontier Xtra RAM boards. Those using SIMMs are expandable later, up to a maximum 4MBytes. Most STEs use SIMMs as standard.

Upgrade your 520 STFM to **1MByte with SIMMs**

Special STF price: £59.00

Upgrade your 520 or 1040 STFM to **2.5MBytes with SIMMs**

Special STF price: £99.00

Upgrade your 520/1040 STFM to **4MBytes**

Special STF price: £159.00

Upgrade your 520 STE to **1MByte**

Special STF price: £17.50

Upgrade your 520/1040 STE to **2MBytes**

Special STF price: £69.00

Upgrade your 520/1040 STE to **4MBytes**

Special STF price: £129.00

Upgrade your Mega 1 to **4MBytes**

Special STF price: £165.00

Upgrade your Mega 2 to **4MBytes**

Special STF price: £99.00

PC Emulators

PC Speed

The best selling PC emulator for the ST.

Special STF price: £79.00

AT Speed

A PC emulator like PC Speed, but this enables most DOS programs to move even faster.

AT Speed ST: £129.00

AT Speed STE: £139.00

DESSERT

Crazy Dots

Add VGA colour to your ST – the ultimate graphics solution. Requires a multisync monitor (see below).

Special STF price: £399.00

Internal single-sided or double-sided drive to a high density drive

A new internal disk drive which can potentially store up to 1.44MBytes of data on a single floppy disk.

Special STF price: £99.95

Monitor – Eizo 14-inch multisync

Enables you to run all three ST screen resolutions on

one screen. Ideal for use with Crazy Dots.

Special STF price: £549.00

Monitor – Eizo 21-inch

A B&W A4 monitor for use with Reflex Graphics Card.

Special STF price: £1,099.00

Monitor – multisync

A cheap and cheerful multisync monitor.

Special STF price: £399.00

Monitor – Qume 15-inch

256 greyscale A4 monitor for use with Reflex. FST flatter screen.

Special STF price: £540.00

Multisync cable

Connects your ST to a multisync monitor.

Special STF price: £24.95

Overscan

Now you can use more of the ST's screen.

Special STF price: £59.95

Reflex Graphics Card

B&W A4 screen expander – ideal for desktop publishing work. Needs a special A4 monitor.

Reflex Graphics Card ST: £249.00

Reflex Graphics Card STE: £299.00

RTS PC-emulator key tops

Give your ST all those peculiar keys found on PC-compatibles – Home, Scroll lock, and the rest

Special STF price: £9.95

RTS Replacement key tops

Transform your ST and give it that professional look

This could be the best chance you're ever likely to find to get your ST upgraded. In the previous nine pages we've been harping on about the things you can do to get your ST motoring, but so that you haven't got any excuse to avoid getting more from your machine, we're offering to do the upgrading for you! Send us your ST for a full service and in the process we can fit any of the upgrades on these pages. We're also offering to repair your ST if it's really suffering. Everything comes with a 12 month warranty, so you can be sure of a year's peace of mind. In a special deal with Atari, we can carry out the general service, fit a memory upgrade and/or TOS upgrade *without invalidating your warranty*. This offer lasts only until Friday 31 July, so make the most of it now. There's never been an easier way to upgrade!

nal upgrade options you may want. Give us a call on the enquiry line number at right and we'll discuss what the problem seems to be.

ST Box

If you've lost your ST's box, we'll send you another one. Note that you don't need a box to send us your ST – any sturdy, secure packaging will do.

Special STF price: £7.49

out invalidating its warranty, as well as TOS 2.06, so you can guarantee you have no problems with incompatible software. This is the only official source of genuine Atari UK ROMs, and the only switchable STE upgrade. There's loads of benefits to upgrading – take a look at page 32 for details.

Special STF price: £65.00

AT Speed C16

Full PC power for your ST. Ideal for running Windows.

AT Speed C16 ST: £189.00

AT Speed C16 STE: £199.00

Upgrade your PC emulators:

Upgrade PC Speed to AT Speed **£79.00**

Upgrade PC Speed to AT Speed C16 **£159.00**

Upgrade ATSpeed to AT Speed C16 **£139.00**

Replacement Power Supply Unit

Special STF price: £42.50

Turbo 20/25

Speed up your ST's processor accelerator with this 25MHz processor.

Special STF price: £299.00

Turbo 30

Ultimate power. Speeds of at least 40MHz are possible. Call the Tower Power line for more information.

CALL FOR DETAILS

with these attractive new keytops.

Special STF price: £34.95

RTS Replacement key clicks

No need for a Mega keyboard – with these your STF, STFM or STE board feels like a whole new monster.

Special STF price: £29.95

Tower Case

Improve the look of your ST with this special metal case which houses your ST and disk drives.

Special STF price: £229.00

Tower Case Enhancements: Octopus

This is the biz if you want to add the extra ports to your ST – requires a Tower Case.

Special STF price: £129.95

Ring ☎ 0480 891171 if you have any questions

Open 10am to 10pm until Thursday 18 June, 10am to 7pm until 31 July and 3pm to 8pm thereafter.

Have the serial number of your ST handy before you call.

Call the Tower Line on ☎ 0753 818816 if you're interested in a Tower system

(4pm to 7pm Monday to Friday until 31 July)

NOW YOU CAN GET THE FULL SERVICE!

Service your ST and take advantage of a superb upgrade. Fill in this form and tick what you want. Work out the total cost, then send the form – or a photocopy – and a cheque or credit card details off to the address below. All orders must be placed by Friday 31 July. If your order is not compatible with your ST, we'll call you and discuss the options available. If you live around Cambridgeshire, you could drop your ST in and save carriage costs.

**To: STF Soup Up Service, 7 Vinegar Hill, Alconbury
Weston, Huntingdon, Cambs PE17 5JA
(fax 0480 890787).**

Do not send your ST yet – we'll contact you, make a booking and arrange collection.

Service your monitor	£7.50	☐
Repairs	CALL	
ST Box	£7.49	☐
Blitter Chip	£49.00	☐
Industrial Cleaning Kit	£4.99	☐
Internal single to double	£45.00	☐
TOS upgrade to 2.06	£65.00	☐
ICD ADSpeed (ST)	£179.95	☐
ICD ADSpeed (STE)	£199.95	☐
Fax Modem	£229.00	☐

MEMORY UPGRADES:

520 STFM to 1MByte (SIMMS)	£59.00	☐
520/1040 STFM to 2.5MByte (SIMMS)	£99.00	☐
520/1040 STFM to 4MBytes	£159.00	☐
520STE to 1MByte	£17.50	☐
520/1040 STE to 2MBytes	£69.00	☐
520/1040 STE to 4MBytes	£129.00	☐
Mega 1 to 4MBytes	£165.00	☐
Mega 2 to 4MBytes	£99.00	☐

PC EMULATORS:

PC Speed	£79.00	☐
AT Speed FM/Mega	£129.00	☐
AT Speed STE	£139.00	☐
AT Speed C16 FM/Mega	£189.00	☐
AT Speed C16 STE	£199.00	☐
Upgrade PC Speed to AT Speed	£79.00	☐
Upgrade PC Speed to AT Speed C16	£159.00	☐

Upgrade AT Speed to AT Speed C16	£139.00	☐
Replacement Power Supply Unit	£42.50	☐
Turbo 20/25	£299.00	☐
Turbo 30	CALL	
Crazy Dots	£399.00	☐
Internal drive to HD drive	£99.95	☐
14-inch Eizo monitor	£549.00	☐
21-inch Eizo Monitor	£1,099.00	☐
Multisync monitor	£399.00	☐
Qume A4 monitor	£540.00	☐
Multisync cable	£24.95	☐
Overscan	£59.95	☐
Reflex Graphics Card	£249.00	☐
Reflex Graphics Card (STE)	£299.00	☐
RTS PC Emulator keytops	£9.95	☐
RTS Replacement keytops	£34.95	☐
RTS key clicks	£29.95	☐
Tower Case	£229.00	☐
Tower Enhancements: Octopus	£129.95	☐

Basic service.....£24.99

Carriage costs.....£12.99 ☐

If you want us to collect your machine, tick this box and include Carriage Costs. If you want to arrange your own delivery, do not tick this box

Plus Total of other items

GRAND TOTAL

Payment – tick appropriate box: ☐ Access ☐ Visa ☐ Cheque ☐ Postal Order

Credit card number: Expiry date

Please make all cheques payable to **COMPO SOFTWARE Ltd**

Your ST serial number: Type (520STE, etc)

Any extras already fitted inside:

Indicate the most suitable date for collection

Name

Address

Tel no. (Home) (Work)

Signed

ATARI

Accessories

SM144 14" Mono Monitor	£129.00
External 3.5" Disk Drive	£59.00
Forget-Me-Clock II	£19.95
ST Monitor Switch Box	£15.99
STE Stereo scart lead	£12.99
STFM scart lead	£12.99
STE Stereo MKII 8833 lead	£12.99
STFM MKII 8833 lead	£12.99
Joystick/Mouse extension lead	£4.99
Replacement Mouse lead	£3.95
Mouse Mat	£3.50
Squik replacement mouse	£14.99

PROTAR Hard Drives

We are official Protar dealers and we stock the excellent Progate range of Hard Disk Drives. Progate hard disk drives are autobooting, very quiet, have DMA through ports, superb disk management software, fast access times, DMA device number switching & the new **Progate Series 2** can now support up to 7 extra SCSI devices as well as accepting a second internal hard disk drive. All standard Progate hard disks have 1 year replacement warranty. The Progate Disk Cache range have a 64K cache that can reduce disk access time by up to 50%. All Progate DC hard disks have 2 year replacement warranty.

Progate 2 - 20Mb Hard Disk	£275.00
Progate 2 - 30Mb Hard Disk	£309.00
Progate 2 - 40Mb Hard Disk	£335.00
Progate 2 - 50Mb with Cache	£420.00
Progate 2 - 44Mb Removable	£595.00
Progate 2 - 60Mb T/Streamer	£565.00
Progate 2 - 80Mb Hard Disk	£420.00
Progate 2 - 150Mb T/Streamer	£775.00

Phone for other sizes.

STE Ram Kits

DIY 1 - 512k upgrade	£19.99
DIY 2 - 2mb upgrade	£69.99
DIY 4 - 4mb upgrade	£129.99

NEW LOWER PRICES !

All STE Ram Kits come with instructions and DO NOT require soldering in most machines.

COLOUR MONITORS

ATARI SC 1435

- * Colour monitor
- * 14" screen
- * Stereo speakers
- * 600 x 285 pixel resolution
- * RGB / Composite inputs
- * Headphone socket
- * Colour matched to ST
- * Free with STE lead
- * Same tube as 8833 II
- * 12 months warranty

only

£ 214.99

PRINTERS

ATTENTION ALL CITIZEN PRINTER BUYERS !

We are offering, to all buyers of Citizen printers some very special offers :

1. CITIZEN PRINTER STARTER PACK. The pack comprises of : 3.5" disk full of printer drivers for the ST, Amiga & PC; 200 sheets of fanfold tractor feed paper; 200 fanfold tractor feed address labels; 5 tractor feed envelopes all for only £12.99.

2. CITIZEN COLOUR PRINTING KIT. This kit enables you to upgrade either the Swift 9, Swift 24E or 224 to a full colour printer. The kit comes with a colour ribbon. Normally retailing at around £40.00, we are offering, while stocks last, the chance to buy this colour kit for only £19.99.

NEW LOWER CITIZEN PRICES !!

Citizen 120D + (9-pin, 144 cps draft, 30 cps NLQ)	£124.99
Citizen Swift 9 (9-pin, 192 cps draft, 48 cps NLQ)	£184.99
Citizen 224 (24-pin, 192 cps draft, 64 cps LQ)	£224.99
Citizen Swift 24E (24-pin, 216 cps draft, 72 cps LQ)	£279.99
Citizen Swift 24X (24-pin, 15" carriage)	£379.99
Citizen Pro Jet (inkjet, 360 cps draft, 120 cps NLQ, 300 dpi)	£409.99

NEW LOWER STAR PRICES !!

Star LC20 Mono (9-pin, 180 cps draft, 44 cps NLQ)	£134.99
Star LC200 Colour (9-pin, 180 cps draft, 45 cps NLQ)	£194.99
Star LC24-20 Mono (24-pin, 210 cps draft, 64 cps LQ)	£204.99
Star LC24-200 Mono (24-pin, 200 cps draft, 67 cps LQ)	£249.99
Star LC24-200 Colour (24-pin, 200 cps draft, 67 cps LQ)	£274.99
Star SJ-48 (inkjet, 166 cps, portable, 360 dpi)	£259.00

Canon BJ10 EX Bubble Jet (ink jet, Epson compatible)	£265.00
Hewlett Packard DeskJet 500 (ink jet, 3 pages per minute)	£389.00
Hewlett Packard DeskJet 500 Colour (NEW! full colour inkjet)	£619.00

SOFTWARE

SPECIAL OFFERS

DISCOVERY "A" SOFTWARE

- Comprises of :
- * DRAGONS BREATH game
 - * SUPER CYCLE game
 - * ANARCHY game
 - * INDIANA JONES game
 - * NEOCHROME art package
 - * FIRST BASIC programming
 - * ST TOUR tutorial program

only
£12.99

DISCOVERY "B" SOFTWARE

- Comprises of :
- * FINAL FIGHT game
 - * SIM CITY game
 - * 9 LIVES game
 - * ROBOT MONSTERS game
 - * NEOCHROME art package
 - * FIRST BASIC programming
 - * ST TOUR tutorial program

only
£12.99

ATARI LYNX

LYNX HARDWARE

Lynx II Console Only	£79.99
Lynx II + PSU	£89.99
Lynx II + PSU + Comlynx	£94.99
Battery Pack	£7.99
Carrying Case	£14.99
Carrying Pouch	£11.99
Car Power Adaptor	£9.50
Mains Power Supply	£14.99
Comlynx Cable	£7.99
Sun Visor/Scratch Shield	£6.99

NEW GAMES !

Awesome Golf	£27.99
Crystal Mines 2	£24.99
Super Skweek	£24.99
Toki	£24.99

NEW LOWER PRICE GAMES !

Ishido	£21.99
Qix	£25.99
Ultimate Chess	£24.99

OTHER LYNX GAME CARDS

A. P.B.	£23.99	Rampage	£23.99
Bill & Ted	£23.99	Road Blasters	£23.99
Blockout	£23.99	Robo Squash	£23.99
Blue Lightning	£23.99	Robotron	£23.99
California Games	£23.99	Rygar	£23.99
Chequered Flag	£23.99	Scrapyard Dog	£23.99
Chips Challenge	£23.99	Shanghai	£23.99
Electrocop	£23.99	Slime World	£23.99
Gates of Zendocon	£23.99	Stun Runner	£23.99
Gauntlet III	£23.99	Tournament Cyberball	£23.99
Hard Drivin'	£23.99	Turbo Sub	£23.99
Klax	£23.99	Viking Child	£23.99
Miss Pacman	£23.99	War Birds	£23.99
Ninja Gaiden	£23.99	Xenophobe	£23.99
Pacland	£23.99	Zybots	£23.99
Paperboy	£23.99	Zarlor Mercenary	£23.99

ATARI

Software

HOME PRODUCTIVITY

Including a word processor, spreadsheet and database, this package provides an ideal introduction to the three most widely used applications in computing. All contain a wealth of features, have a user friendly interface and come with Quickstart Tutorials carefully designed to get you up and running as quickly as possible.

£ 19.99

SOUND & MUSIC

With its built in MIDI ports, the ST is any musicians dream. This package combines a high tech sound sampling cartridge with a powerful music package and drum machine. "Grab" sounds from your favourite Video or Album, then edit and mix them to put together those amazing effects.

£ 19.99

PERSONAL FINANCE

Organise your finances! Containing special software to handle the financial transactions that surround your life. Keep track of your bank and savings accounts credit cards, mortgage etc. Also included is a powerful electronic "Filofax" that keeps you address book and diary upto date.

£ 19.99

WORD PROCESSING

Suitable for virtually any word processing task, you can create and edit anything from short memos and letters to complex documents and technical papers that include detailed pictures and diagrams.

£ 24.99

DATABASE MANAGEMENT

This powerful package benefits from the latest ideas in ease-of-use as well as the full power of a relational database system. Based on VCR style controls you can design and create databases ranging from simple address books to powerful information management tools.

£ 24.99

SPREADSHEET

A powerful financial management tool, that will let you handle large amounts of information with amazing ease and speed. Compatible with the industry standard Lotus 123, this package contains a wealth of features, stunning graphing functions and on-line help at the touch of a button.

£ 24.99

PROGRAMMING UTILITIES

This amazing value-for-money package contains almost every utility you'll ever need. Designed to complement either Atari's BASIC programming package or other popular ST programming languages this pack includes a Resource Editor, a Font and Icon Editor, a Disk Editor and a whole host of other, powerful programming tools.

£ 24.99

TELESALES LINES OPEN 8.00AM TILL 8.00PM - 7 DAYS A WEEK - 0903 700714
TELESALES LINES ARE PERSONALLY MANNED - NOT ANSWERPHONES !

ATARI STE PACKS

ALL ATARI STE MACHINES HAVE BUILT IN 1MB DISK DRIVES AND ALL PRICES INCLUDE VAT. ALL PRODUCTS CARRY A FULL 12 MONTH WARRANTY. PLEASE RING US BEFORE ORDERING TO CHECK STOCKS AND CURRENT PRICES.

ATARI STE START. consists of the STE computer, mouse, modulator etc and First Word word processing software, NeoChrome graphics software with ANI animation package plus 4 classic games - Missile Command, Crystal Castles, Super Breakout and Battle Zone.

ATARI STE DISCOVERY PLUS. consists of the STE computer, mouse, tv modulator etc and the following software First Basic programming software, ST Tour tutorial program, NeoChrome art package and games - Dragons Breath, Super Cycle, Indiana Jones, Anarchy, Final Fight, Sin City, 9 Lives and Planet of the Robot Monsters.

ATARI STE ARCADE PLUS. consists of the STE computer, mouse, tv modulator etc and 20 games - N. Zealand Story, Chase HQ, Ark, Crazy Cars, Op. Wolf, Super Hang On, Super Cars, Skidz, Switchblade, Axe, Magic Hammer, Asterix, Chess Player 2150, Drivin Force, Live + Let Die, Onslaught, Pipermania, Rick Dangerous, Rock n Roll, Skweek and Trivial Pursuit.

ATARI STE KUMA BUSINESS. consists of the STE computer, mouse, tv modulator etc and a superb range of business software comprising of K-Word 2 word processing software, K-Spell Checker, K-Data database software, K-Spread spreadsheet software, K-Graph which create business graphics (charts, graphs etc) and Metacomco Basic Language.

ATARI STE CURRICULUM. consists of the STE computer, mouse, tv modulator etc and the following educational software - ST Word, ST Base, Hyperpaint 2, Music Maker 2, First Basic, Read & Learn word recognition and sentence construction, Primary Maths tutor, GCSE Maths tutor, GCSE French tutor, GCSE Geography tutor and General Knowledge tutor.

512k 1mb 2mb 4mb

£239.00 £259.00 £289.00 £359.00

TELESALES

£249.00 £269.00 £299.00 £369.00

8AM - 8PM

£269.00 £289.00 £319.00 £389.00

7 DAYS A

£259.00 £279.00 £309.00 £379.00

WEEK !!

X N/A £319.00 £349.00 £419.00

ATARI MEGA STE

ALL ATARI MEGA STE PRICES INCLUDE VAT. ALL PRODUCTS CARRY A FULL 12 MONTH WARRANTY. ALL MEGA STE MACHINES ARE SUPPLIED WITHOUT MONITOR. PLEASE RING US BEFORE ORDERING TO CHECK STOCKS AND CURRENT PRICES.

ATARI MEGA STE. consists of the Atari Mega STE computer with detachable keyboard, built-in 1.44mb disk drive and running at 16Mhz (switchable to 8Mhz.) and mouse etc.

1mb 2mb 4mb

£529.00 £559.00 £629.00

ATARI MEGA STE HARD DISK OPTIONS

52MB Hard Disk with fixing kit and hard disk software £249.00
120MB Hard Disk with fixing kit and hard disk software £399.00
240MB Hard Disk with fixing kit and hard disk software £649.00
420MB Hard Disk with fixing kit and hard disk software £1199.00

NEW, EVEN LOWER, MEGA STE PRICES !!!

ATARI TT 68030

ALL ATARI TT 68030 PRICES INCLUDE VAT. ALL PRODUCTS CARRY A FULL 12 MONTH WARRANTY. ALL TT 68030 MACHINES ARE SUPPLIED WITHOUT MONITOR. PLEASE RING US BEFORE ORDERING TO CHECK STOCKS AND CURRENT PRICES.

ATARI TT 68030. consists of the Atari TT with 68030 32-bit processor, clock speeds of upto 32Mhz, 1.44Mb high density floppy disk drive built in, detachable keyboard, and operating system V3.06, six screen resolutions (4 colour modes using upto 4096 colour palettes, 1 mono mode and a super hi res mono mode of 1280 x 960). Memory expansion of upto 34MB possible.

2mb 4mb 8mb

£999.00 £1249.00 £1599.00

ATARI TT 68030 HARD DISK OPTIONS

52MB Hard Disk with fixing kit and hard disk software £249.00
120MB Hard Disk with fixing kit and hard disk software £399.00
240MB Hard Disk with fixing kit and hard disk software £649.00
420MB Hard Disk with fixing kit and hard disk software £1199.00

ATARI TT 68030 MONITOR OPTIONS.

ATARI PTM 144 - VGA Monochrome 14" Monitor £159.00
ATARI PTM 194 - VGA Super Hi Res Monochrome 19" Monitor £649.00
ATARI PTC 1426 - VGA Colour Multisync 14" Monitor £399.00
PROTAR PROSCREEN - as ATARI PTM 194 £649.00

IF YOU WISH TO ORDER WITH US, THEN PLEASE SEND YOUR CHEQUES, BANKERS DRAFTS, POSTAL ORDERS, CASH ETC TO OUR MAIL ORDER ADDRESS. (PLEASE MAKE CHEQUES PAYABLE TO BEST PRICES) OR RING OUR MAIL ORDER HOTLINE ANY TIME BETWEEN 8.00AM AND 8.00PM, 7 DAYS A WEEK. (OUR LINES ARE PERSONALLY MANNED - THIS IS NOT AN ANSWERPHONE) AND USE YOUR CREDIT CARD. ALL ORDERS OVER £100 SUBJECT TO £5 DELIVERY CHARGE, OR ALTERNATIVELY VISIT OUR SHOP.

SHOWROOM & SHOP

CHIPS COMPUTER CENTRE, 53 RUGBY ROAD, WORTHING, WEST SUSSEX, BN11 5NB.

TEL : (0903) 700804.

OPENING : MON TO FRI 10AM TO 6PM. SAT 9.30AM TO 5.30PM
FINANCE / CREDIT FACILITIES (SHOP ONLY).
PART EXCHANGE CONSIDERED (SHOP ONLY).
NEW AND USED ST, AMIGA & PC EQUIPMENT ON DISPLAY
ALL TYPES OF SOFTWARE (BUSINESS / LEISURE / EDUCATIONAL).
REPAIRS UNDERTAKEN. TRAINING. INSTALLATION. ON-SITE WARRANTIES.



MAIL ORDER SALES

BEST PRICES (DEPT STF), 53 RUGBY ROAD, WORTHING, WEST SUSSEX, BN11 5NB.

TEL : (0903) 700714.

OPENING : 7 DAYS A WEEK 8AM TO 8PM
ALL PRICES INCLUDE VAT. ALL ORDERS OVER £100 ADD £5 FOR NEXT WEEKDAY COURIER DELIVERY. ORDERS UNDER £100 ARE SENT BY POST.
CREDIT CARDS ARE SUBJECT TO ADDRESS VERIFICATION BY CARD ISSUERS.
GOODS USUALLY SENT OUT THE SAME DAY WHEN CLEARED PAYMENT IS RECEIVED BEFORE 2PM.
PERSONAL CHEQUES REQUIRE 7 DAY CLEARANCE.

All prices include 17.5% VAT. Free delivery ONLY on orders under £100. All prices / specifications / special offers subject to change without notice.

OUR SALES LINES (NOT A ANSWERPHONE !!) ARE OPEN FROM 8.00AM TILL 8.00PM - 7 DAYS A WEEK

Public Sector

We don't like to talk about our reviews, right, 'cos like, they talk for us, right. Like if we do a review like, then we've done it, right? And it's done then, right? And we don't have to talk about it. Chris Lloyd is the quiet one at the back with the silly hat, the subtle jokes and massive pile of cheap Public Domain disks

A PACKET OF TEN, PLEASE

We've all got our favourite programs, haven't we? A set of ten most precious disks, lovingly labelled and affectionately boxed.

Martyn Dryden from the South West Software Library has just such a set and, under threat of a really bad Chinese burn, he consented to let us have a look

1 Barrel - Disk 2045. Grabs the output from a printer and saves it to a file. Handy for detective work when a printer won't behave.

2 Gulam - Disk 311. Brilliant command line interface, just like the ones those PC contemptibles have, only much better.

3 L-RAM - Disk 2045 and **MaxiDisk** - Disk 386. There's a dead heat between these two RAM disks, both of which are totally bullet-proof. The latter is slower but still excellent when memory gets a bit tight.

4 FastCopy 3 - Disk 849. An all-singing all-dancing disk copier that creates a MS-DOS compatible disk by default.

5 Chameleon - Disk 1585. This enables you to run Desk Accessories from the Desktop and prevents all those AUTOfolder Accessories that crash from hanging-up your hard drive.

6 Revenge Document Displayer - Disk 1641. Once you've used this program to read through a text file, you need never ever have to read one from the Desktop again.

7 MemFile - Disk 913. The essential disk/file/memory editor for delving into the heart of things.

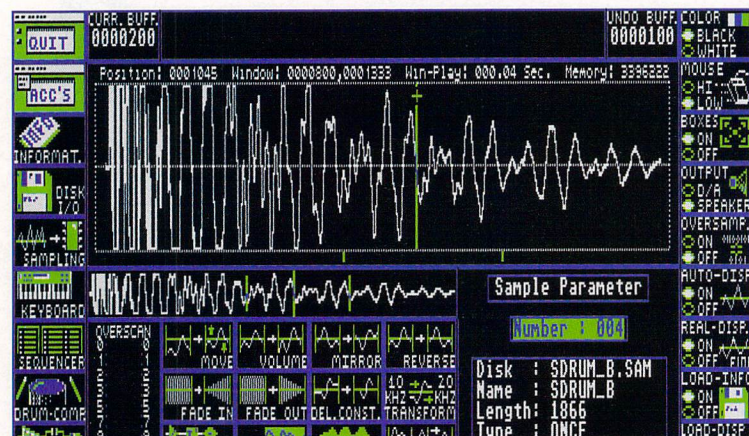
8 V-Killer - Disk 1647. Just the job for zapping nasty virus beasts.

9 View GIF - Disk 1633 and **GEMView** - Disk 1905. Another dead heat between these two programs for viewing and converting every picture format under the sun.

10 UniTerm - Disk 183. The only comms program you're ever going to need, most probably.

ART AND MUSIC

SOUND MERLIN
Caledonia PDL - Disk MU 49

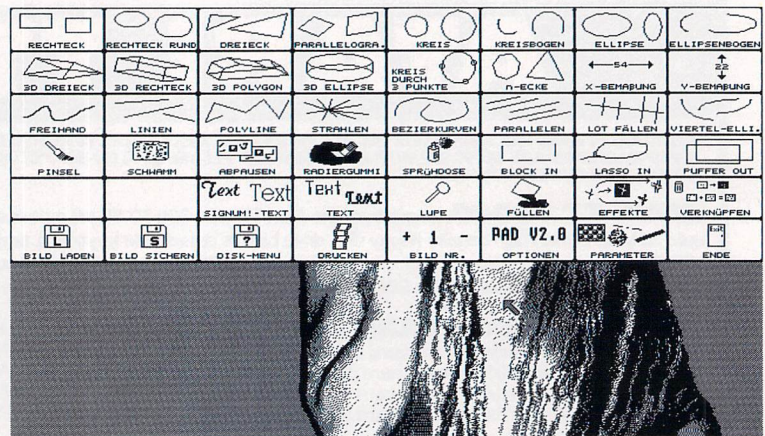


● The sample editing screen from *Sound Merlin* with a mass of editing tools including a dozen different digital filters and other flashy bits. One of the best bits of Shareware for ages.

There's an utterly stunning mass of features on this one. What *Sound Merlin* can't do with samples, you probably don't need to do. Originally a commercial program, it's now Shareware. You can import samples and edit them, create your own samples from raw waveforms, or even sample straight into it with the right hardware. There's a sample sequencer, drum machine, the ability to assign samples to various keys and play them with the keyboard. And last, but by no means least - a large stainless steel sink. The only drawback is that the instructions are complete gobbledegook - a big text file of meaningless words, something called "German," apparently. Apart from that, it's an absolute gem of a program.

STF Rating - 91%

PAD
Goodmans PDL - Disk 1351



● Oh good, it's that Christie Brinkley pic again, possibly the only picture to be more famous than its subject. This is something I knocked up in a minute or two. I just loaded it and there it was.

Now, this mono art program is what you call fully-featured. Pity all the text is in German, but, in all fairness, it doesn't matter very much because the program's extremely easy to use. As well as the usual stuff, you get the ability to load and save GEM and Signum fonts, easy creation of 3D shapes, up to 16 times magnification, parallel line creation, arcs, polygons, special effects and loads more useful stuff. It can also cope with a bewildering array - arrays are always bewildering in computerland - of file formats, like Neo, IMG, Degas and PAC files. Even the icons are fairly self-explanatory. It's all decently speedy and easily accessible. Well done, that German fellow. Is there any chance of an English translation, then?

STF Rating - 90%

GAMES

FATE MASTER

Goodmans PDL - Disk GD 1572



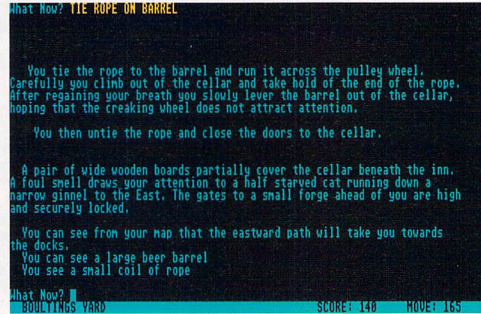
● The office party from hell and the only survivor's a captions writer covering behind a desk. Remember, children - whatever you do, you should never mention pay rises before the little mint chocolates have gone round. *Fate Master* is an enjoyable little save-the-day-by-defeating-the-nasty-aliens jobbie.

There's trouble on planet Tafoi - the Swocki have been wiping out the Galluks. The real surprise is that it's up to you to save the day. *Fate Master* is a mix of an RPG and an arcade avoid-'em-up. You guide your little blue blob character around picking up objects, interacting with the locals and offing the odd weirdo or two. Gameplay is simple to get into and all joystick controlled. The plot is, for once, interesting and there are lots of luvverly little touches - like the way your chap relaxes with a fag while you're using the menus. The graphics are cute and cartoony and the whole game is highly polished and slightly reflective. One of the better ones, this.

STF Rating - 81%

THE LADY IN GREEN

ST Adventurers PDL - Disk AGT 48



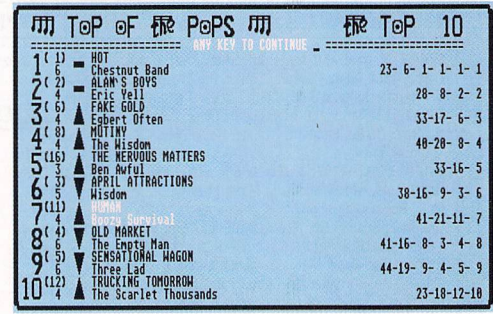
● A text adventure in the classic mould, *The Lady in Green* looks rather like an Infocom effort. It's a simple introduction to the genre with none of that complex typing and struggling with commands.

Text adventures used to be popular, but they're a bit out of fashion now. There's none of that joystick waggling business - it's all puzzles and frustration while you try and suss out the twisted mind of the programmer. *The Lady in Green* is created using *Adventure Game Toolbox* and has a novel twist. There are no wizards nor any killing of things. After discovering a painting in a hotel, you get zapped back in time to help the mysterious green woman. There are a few clues to get you going, but then it's fairly easy. The language is flowery and faintly ridiculous with plenty of howlers. The game world is sparse - you are annoyingly given descriptions of objects, then told they're not there. Not bad, but hardly state-of-the-art.

STF Rating - 54%

TOP OF THE POPS

Merton PD - Disk ME 25



● Rock 'n' roll - what a business - the long nights giffin', the hordes of screaming record executives and all those "babes" you just have to hang out with, man. None of that here - *Top of the Pops* is a dull and pointless chart-watching exercise. Yawn, man.

A management simulation with almost no management bits. You simulate being a record company boss. You can release one record a week and spend a few quids promoting it. Then you sit back, light a large cigar and wait for the charts. If it charts high, you can order the new limo - if not, it might be time to change the band's haircut again. Luck plays a large part here - the amount of money you invest only partially influences the outcome. Then it's back to releasing a new record. There's no band management, tours, albums or frantically trying to teach Jim "the man" how to play more than three chords and stand up at the same time. *Top of the Pops* doesn't get a look in either. Forget it, dude.

STF Rating - 28%

SPLASH

ST Club - Disk BPR 17.



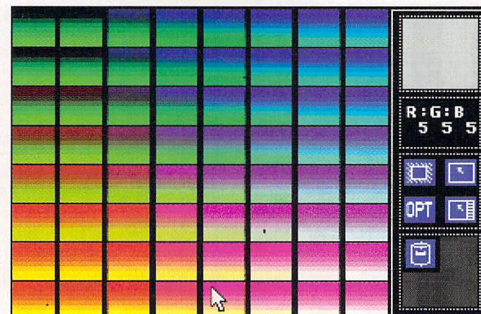
● Doing stuff with *Splash* is dead easy, particularly with the symmetry and colour cycling functions. This is the sort of art package anyone can get into. Even the menu moves! Splendid stuff.

Splash is an art program specially put together for children, so it's intentionally simple and easily accessible. It also has some good touches - for example, the icon menu animates when you move the cursor into it and, for once, the icons are quite intelligible. Drawing functions are straightforward things like squares and circles, with the usual freehand function and a few visually attractive - if not useful - effects like colour cycling and symmetry. As an aid to getting children used to using art packages, this is pretty good. It's suitably geared towards drawing big, bold and bright shapes which kids should love. And besides, the animated menu is brilliant. So there.

STF Rating - 79%

PALETTE MASTER

Wizard PD - ART 05



● *Palette Master* showing its mastery of the palette. Unfortunately, the ability to have more than 16 colours on-screen at once isn't really backed up by any special drawing functions.

Art programs are all the same, really. They all enable you to draw, after all. So, when something comes along with a few different features, it's worth a closer look. *Palette Master* can, in theory, display pictures using all 512 ST colours. 'Course, theory's never the same as practice, and you're limited to 16 colours on each scan line. But worry ye not, the program looks after all the colour management stuff for you, arranging the palette as necessary. Apart from this feature, the program's pretty much standard, with the usual spray can, text and block facilities any self-respecting program should have. Could be worth a look if you simply have to have those extra colours.

STF Rating - 72%

PICTURE CONCEPT

Floppyshop ST - Disk ART 3091



● Turn perfectly decent graphics into a distorted mess with *Picture Concept*. Everything is accessible from the menu and pretty fast, even when mapping a piccie round a sphere. Nfu in a sort of distorted way.

Art programs are all very well, but what you really want to do with a flashy picture is wrap it round a cylinder and give it an attractive permanent sine wave, right? *Picture Concept* enables you to perform some drastic surgery on any *Neochrome* or *Degas* low resolution picture. Among the weaponry are horizontal and vertical curves, tools for mapping the screen around a weird shape, resizing and mixing - which superimposes two pictures over each other thus modifying the palette. Quite a few of the functions are in most decent paint programs, although the extras are fun to mess with - whatever the initial picture is, you seem to end up with a wibbly abstract.

STF Rating - 68%



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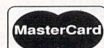
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PRO 20 - Video Master - superb video titler (\$3.95)
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LANG 24 - C Adventure Toolkit v2.0 - very powerful language for creating large, complex text adventures.

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TRAC 49 - Berry, Close, Depress, Doc II, Eagles, Eg, Enemies, Esion, Going, Goodlife, Hdance, L-around E'
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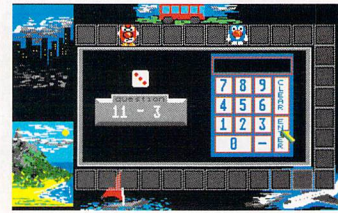
→ EDUCATION

EARLY LEARNING MATHS

Budgie - PRO 26

Originally a commercial release, *Early Learning Maths* is now part of the excellent Budgie productivity range. After typing in your name and setting the difficulty level, there's a choice of a dozen games designed to teach the basics of maths and logic. It's all simple to use with bright clear graphics and bleepy sound effects and tunes. With three difficulty levels and so many different games, it should take a while to exhaust itself. One of the better ones - start here.

STF Rating - 85%



● All the games in the excellent *Early Learning Maths* feature these two cute characters, Dizzy and Meanie. Getting answers right helps Dizzy's plans, while getting them wrong helps Meanie disrupt them.

THE MAGIC SPELLER

Floppyshop ST - Disk EDU 3014

Your ST tells you in a robotic voice the word you have to spell, and repeats the letters while you tap them in. Get three right and one of the pictures at the top of the screen transforms itself into something else. Not much of a reward, really. The voice is a bit difficult to understand at times - leading to mistakes unless you also read the little clue at the bottom of the screen. There are over a dozen datafiles of words to load in and a program for creating your own.

STF Rating - 79%



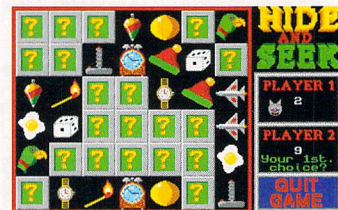
● *Magic Speller* is a straightforward spelling number, just type in the words correctly for those brownie points. The good bit is the speech synthesis, although it's not always as distinct as it could be.

1ST MATHS

Floppyshop ST - Disk EDU 51

One for the very young consisting of three very easy and well-presented maths quizzes. It's all mouse controlled and the graphics are bold and colourful. There's adding, subtracting and counting. All the answers are less than ten, so it's not exactly taxing. There's no graphical or sonic reward for a right answer, just an endless row of sums. The fourth game is a memory game for one or two players. The long term use is limited, but it's a good intro to the basics. Good try.

STF Rating - 67%



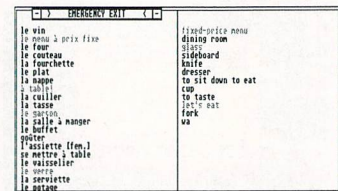
● Quite what the classic memory game of searching for pairs has to do with maths is anybody's guess. *1st Maths* is a well-presented set of games, three of which are very similar as well as this which is more fun.

CABBY

South West Software Library - Disk 1878

Cabby helps with that sticky business of learning silly foreign spellings. The first section is strange because the English and foreign translations flash before your eyes. If you can avoid getting hypnotised, it should sink in. There are a couple of dozen French and German sets of words to load in and a program to create your own sets, so you can use *Cabby* to learn any language. Slightly better than wrestling with a dictionary.

STF Rating - 67%



● What's the matter? Don't you recognise a dynamic vocabulary tutor when you see one? Just match those foreign words with the good old British ones. *Cabby* is designed to bash foreign vocab into you.

WORD RACE

Floppyshop ST - Disk SES 07

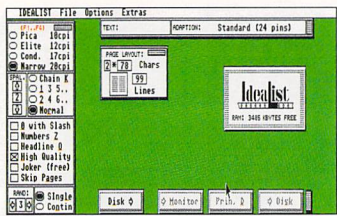
Simple and infuriating, *Word Race* has you guessing the words from eight categories which is made all the worse by spelling mistakes and the categories getting mixed up leaving you mystified by the rare "duck" tree. The range of words is limited and you soon learn what they all are. A good try, but it's too slow and poorly executed, and basic spelling mistakes in an educational program claiming to teach spelling doesn't exactly inspire confidence.

STF Rating - 53%

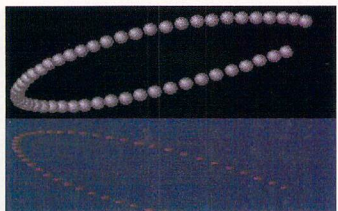


● That's you in the tasteful track-suit - *Word Race* is like *Hangman* without the violence. It's not as easy as it looks either, although the Editor did manage some of them with no help at all. Well, not much.

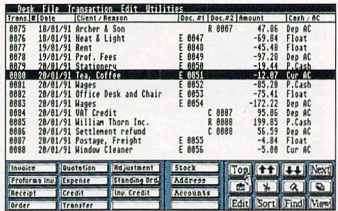
UTILITIES



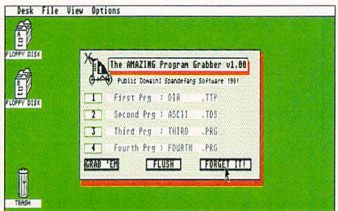
● **Text files? Printers? Ha! We laugh at such things. Armed with our copy of Idealist and a packet of Hobnobs, printing out text files holds no fear. Well, not much, anyway.**



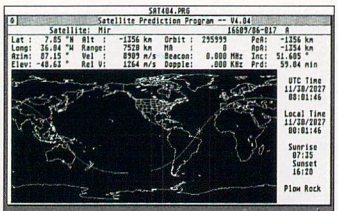
● **Living proof that trigonometry is useful after all, the wobbly-wavy bits from demos. The STOS Pack has some clever snippets including this band of little balls swirling smoothly across the screen. Neat trick.**



● **The main screen from the snappily titled Biz Accounts. Everything is accessible and as simple as the world of accounting allows. Sounds good? Check this complete demo of the commercial program.**



● **The amazing Program Grabber is – er, fairly amazing really. Four of your favourite programs can be turned into Desk Accessories, so you can run them while doing that all important bit of word processing.**



● **Satellite plotting in real-time is one of the Satellite Orbit Prediction Program's handiest and neatest tricks. Makes you come over all warm and tingly, doesn't it?**

IDEALIST

Floppyshop ST – Disk UTIL 3021

Getting your ST and printer to talk politely to each other can be frustrating – but not any more. *Idealist* runs as a Desk Accessory in high resolution, or as a program in high or medium res. There are four fonts and it can print in nine columns. It susses out lines that are too long and can link files together. There are dozens of printer drivers including some for the deskjet and Atari laser. If you often print out text files and want more control, this is worth a whirl.

STF Rating – 77%

STOS SOFTWARE PACK 1

Riverdene PDL – Disk 985

59 *STOS* Basic routines covering all sorts of graphical effects and goodies. There are plenty of demo bits like sine wobbling and little balls flying around the screen. Some utilities, too, like an encrypting program, a sample convertor and a picture convertor to create .IFF pictures. Routines are good, but there is no documentation. Some of the sprite shifting code is very good indeed. If you need a helping hand getting impressive stuff out of *STOS*, give this a look.

STF Rating – 72%

BIZ ACCOUNTS

Goodmans PDL – Disk GD 1558

A powerful and easy-to-use accounts program – well, that's what it says in the text file. This a demo version of the full thing and is identical except it only prints once and you can't save anything. Handles invoices, expenses, receipts and the the usual business ledger-type gubbins, including VAT. There's a comprehensive reports and listings section and an address database. The main ledger can hold up to 5,000 records and everything is editable and flexible.

STF Rating – 72%

PROGRAM GRABBER

Floppyshop ST – Disk UTIL 3023

A smart little beastie that runs most programs as Desk Accessories – up to four can be held in memory at once. Also on the disk are other goodies like a Desk Accessory to control the Star LC10 printer, a programmer's number convertor, a boot-sector identifier, colour and mono emulators, a program for unzipping zipped files and an indexer to generate indexes from text files. Phew! Quite a mixed bunch with something for everyone.

STF Rating – 69%

SATELLITE ORBIT PREDICTION PROGRAM

Goodmans PDL – Disk SAT 404

A useful program to predict the position of satellites using the standard Keplerian orbital elements or a position and velocity vector. Now, that's handy, eh? Well, if you're into astronomy it could be. You can build up a database of satellite orbital information and edit the multitude of complex-looking parameters. Satellite data can be presented in the standard NASA 2 line format or binary form. It's all slick and well-presented.

STF Rating – 63%

The ST FORMAT PD directory

● **Where to go for Public Domain software – demos, games and utilities for around £3 a disk! If you write to any of these libraries for a catalogue, enclose an SAE.**
● **Budgie games are available from all PD libraries indicated by a (B). Simply mention the disk number (above the review) when you order the disk.**

SOUTH OF ENGLAND

16/32 PDL, 35 Northcote Road, Strood, Kent ME2 2DH ☎ 0634 710788

Arrow PD, 6 Kents Orchard, Perry Street, South Chard, Somerset TA20 2QB

Atari Advantage, 56 Bath Road, Cheltenham GL53 7HU ☎ 0242 224340

Awesomedemos, 3 Mason Road, Seaford, East Sussex BN25 3EE

B-Soft, 2 Oliver Drive, Calcot, Reading, Berks. RG3 5XN. ☎ 0734 419981

Drake PD, 12C How Street, The Barbican, Plymouth Devon, PL4 0DA

EVDP, 15 Cleeve Road, Gotherington, Cheltenham, Glos. GL52 4EW

Freaks PDL, 29 Leap Valley Crescent, Downend, Bristol BS16 6TQ ☎ 0272 570122 (B)

Gemini Shareware, 10 Warwick Avenue, Slough, Berks. SL2 1DX ☎ 0753 28183

Imageart, 19 Brenda Road, Tooting Bec, London SW17 7DD ☎ 081 767 4761

MT Software, Greensward House, The Broadway, Totland, Isle of Wight PO39 0BX ☎ 0983 756056 (B)

Merton PD, 10 Grasmere Avenue, Merton Park, London SW19 3DX

New Age PDL, 30 Anderson Estate, Lower Road, Hockley, Essex SS5 5NG ☎ 0702 232826(B)

Paradise Computers, 11 Winfield Avenue, Patcham, Brighton, East Sussex BN1 8QH

PD Essentials, 22 Fern Avenue, Mitcham, Surrey CR4 1LS

PDSSC, 5 Walnut Close, Barkingside, Essex IG6 1HE ☎ 03548 448

ProBUS, Birch Hill, Sway, Lymington, Hampshire SO41 6BJ

Prophecy PD, 390 Coulsdon Road, Old Coulsdon, Surrey CR5 1EF ☎ 0737 554536

Public Dominator PD Atari, PO Box 801, Bishops Stortford, Herts. CM23 3TZ. ☎ 0279 757692 (B)

Public Sector PDL, 50 Ripon Road, Stevenage, Herts. SG1 4NA ☎ 0438 364722 / 361324

Riverdene PDL, 30a School Road, Tilehurst, Reading, Berks RG3 5AN ☎ 0734 452416 (B)

Senlac, 14 Oaklea Close, Old Roar Road, St Leonards On Sea, E.Sussex TN37 7HB ☎ 0424 753070

Seven Disk, Digswell Water Lodge, Digswell Lane, Welwyn Garden City, Herts AL7 1SN ☎ 0438 840456

Softville PD, Unit 5, Stratfield Park, Eletra Avenue, Waterlooville, Hants PO7 7XN. ☎ 0705 266509 (B)

Solent Software, 53 Rufus Gardens, Totton, Hants. SO4 3TA ☎ 0703 868882

South West Software Library, PO Box 562, Wimborne, Dorset BH21 2YD (B)

ST Adventurers PDL, 32 Merrivale Road, Rising Brook, Stafford, Staffs ST17 9EB

Warzone PDL, 53 Ropewalk, River Street, St Judes, Bristol BS2 9EG

Wizard PD, 178 Waverley Road, Reading, Berks, RG3 2PZ. ☎ 0734 574685 (B)

NORTH OF ENGLAND

Alpha Computing, 32 Meadow Drive, Halifax, W Yorks HX3 5JZ

Akore Shareware, 7 Fishergate Point, Lower Parliament Street, Nottingham NG1 1GD ☎ 0800 252221

D W Stables, Unit 1, Johnson's Shopping Centre, 29-31 Bond Street, Blackpool FY4 1BQ ☎ 0253 404550

Goodman PDL, 16 Conrad Close, Meir Hay Estate, Longton, Stoke on Trent, Staffs ST3 1SW. ☎ 0782 335650 (B)

LAPD, 80 Lee Lane, Langley, Heanor, Derbys. DE7 7HN ☎ 0773 761944 (B)

Metropolis PD, 38 Howick Park Drive, Penwortham, Preston PR1 0LU ☎ 0772 748422

Nightshift PD, 50 Averill Road, Highfields, Stafford Staffs ST17 9XX

Page 6 Publishing, PO Box 54, Stafford ST16 1DR ☎ 0785 213928 (B)

PD ST, 95 Elton Road, Sandbach, Cheshire CW11 9NF ☎ 0270 762520 (B)

ST Club, 2 Broadway, Nottingham NG11 1PS. ☎ 0602 410241 (B)

STING Public Domain, 23 Manor Grove, Westvale, Kirkby, Liverpool L32 0UZ ☎ 051 546 4640

The Source PD, 7 Shearwater Lane, Norton, Stockton-On-Tees, Cleveland TS20 1SH ☎ 0642 550896

Tower PD, PO Box 40, Thorton-Cleveleys, Blackpool FY5 3PH

TruST PD, 18 The Park, Southwark, Halifax, HX3 9QY ☎ 0422 341606 (B)

SCOTLAND

Caledonia PDL, 250 Oldtown Road, Hilton, Inverness, IV2 4PT ☎ 0463 225736 (B)

The Circular PD Library, 14 Morrison Drive, Lennoxtown, Glasgow G65 7BA

Floppyshop ST, PO Box 273, Aberdeen AB9 8SJ ☎ 0224 312756 (B)

Office Choice, Suite 14, Avon House, Town Centre, Cumbernauld G67 1EJ (B)

State 808 PDL, 3A Old Lanark Road, Carluke, Scotland ML8 4HW

WoolleySoft, Humblesknowe Cottage, Ramolye, Dunblane, Perthshire, Scotland FK15 0BA

WALES

Shoestring Software PDL, 78 Carmarthen Road, Swansea SA1 1HS

IRELAND

PD 4U, 4 Sintonville Avenue, Belfast BT5 5DG ☎ 0232 672338

OVERSEAS

Algemeen ComputerClub Nederland (ACN), Postbus 5011, 200 CA Haarlem ☎ Holland 023 351100 (B)

Atari ST User Group Norway, c/o SA Jensen, N-3630 Rødberg, Norway ☎/fax 03 741473

Dom' Pubs, 10 Rue du Vergeron 38430 Moirans, France

LTPD, 37 Montey Ave, Box #2, Toronto, Ontario, M6S 2G8, Canada

Public Domain Corporation, 4320 – 196th SW, Suite B-140, Lynnwood, WA 98036-6721, USA ☎ 0101 206 745 5980 (catalogue £1)

ST-PLUG, 1670 Heron Road, Box 22026, Ottawa, Ontario, Canada K1V 0C2 ☎ BBS 0101 613 731 2779. (B)

Wacko Software, Willem Pijperstraat 63, 1077XL Amsterdam, The Netherlands

BUYER BEWARE: Inclusion in this directory does not imply that *ST FORMAT* endorses or recommends any PD library in any way.

● If you run a PD library not listed here and wish to be included, or if you want to amend any details, send full details and a copy of your latest catalogue to: PD Directory, *ST FORMAT*, 30 Monmouth Street, Bath, Avon BA1 2BW



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The ST Club

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ST Applications

Over two years ago New Computer Express described our newsletter: "To call it a newsletter shows a terrific amount of modesty on their part...It really is packed with information, with more concentration on the serious side of the ST." ST Applications is a complete re-design of The ST Club Newsletter that has grown to 3,500 subscribers since we started it four years ago. Each monthly issue runs to at least 60 A-4 pages. If you would like to subscribe or receive an evaluation copy please complete the form below.

Fontkit Plus 3.

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UIS III

Powerful replacement for the Atari Item Selector. Universal Item Selector III incorporates a host of utility functions: format disks, copy, move and rename files and folders, create folders, find files, set file paths etc. "You'll wonder how you ever lived without it", ST Format, December 1990. Price £19.95.

The Catalogue

Our collection of PD and Shareware disks runs to over 2,000 disks and we guarantee same day dispatch on all orders. Our Free Catalogue - (46 pages A4) details these disks and all of our products and services: Books, Budgie disks and laser printing. We also publish: Astronomy Lab (£19.95), Key Master (£6.95), Oxford Chess (£9.95), Molgraph (£12.95), Guides to Timeworks DTP (£9.95), and 1st Word (£6.95). Details of these are in our current catalogue. Write or telephone for your copy today.

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ST answers

Once again we hit those pages with those dinky little icons and those taxing questions like: "What are all those small square white things on the front of my ST for?" Yep, it's ST Answers again. Cue furrowed brows

WHAT DOES IT ALL MEAN THEN?



BEGINNERS: Did you know that pressing <Esc> updates the directory window? If you didn't, you're probably a beginner. Look for this icon!



COMMS: Baud rates, eh? You can't live with them and you can't connect a modem without them. Communications probs answered where you see this.



DISKS: They're small and blue, aren't they? What's the problem? The problem comes with the disk drives, like when they don't work. Look no further!



GAMES: How do you get past the screen with the tree in *Gobblins*? If anyone knows, drop us a line – it's driving us bats. But now, your queries.



GRAPHICS: Stipples gone horribly wrong? Can't get that colour blended? Don't know what a flood fill is? You need the Graphics answers, then.



HARD DRIVES: Like an extremely large amount of money, hard drives are great to have but a swine to manage. Check this out for non-floppy solutions.



PRINTERS: One thing printer manuals never get around to telling you is what to do if the darn printer won't print. We will, but only if you ask nicely.



PROGRAMMING: To some, programming is as logical as Mr Spock. To others, it's ridiculously fussy and unfathomable. Group 1 meet Group 2 here.

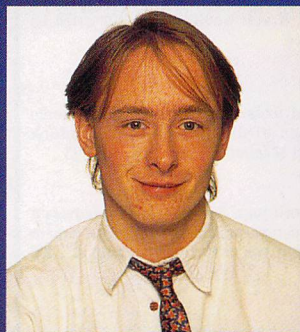


SOUND: Got the keyboard, got the leads – where do you plug it all? Don't worry – MIDI is spoken here, and we're not afraid to admit it.

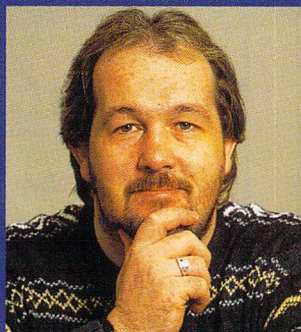


ST PROBLEMS: You're in real trouble when even your ST doesn't want to cooperate. If your little grey pal won't play, give us a shout – we can help.

MEET STF's PANEL OF EXPERTS



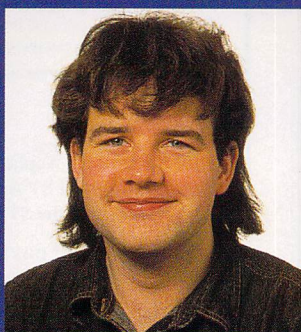
ASA BURROWS
Before *STOS* came along, there was no Asa Burrows. He simply did not exist. Then, as soon as it appeared – bing! There he was, the man with all the *STOS* knowledge.



BARRIE CAPEL
Barrie (or "Barry" to people who don't know him) used to think *GFA* was a brand of cigarettes. Now, of course, he knows it's a type of BASIC. Actually, he's rather good at it.



CLIVE PARKER
Despite having an intimate knowledge of the ST's innards, despite having put together countless bits of hardware, Clive still likes *Star Trek*. But then we all have weaknesses.



ED RICKETTS
The uncomfortable-looking one on the end who does all the gamey bits (which don't really count as ST Answers but get lumped in here anyway).

8-BIT SOFTWARE



Mr A Gofford of Peterborough asks if 8-bit games software can be run on an STE. The answer is, of course, no. All 8-bit games are designed to run specifically on the machine they were written for. Although there are some emulators about from PD libraries, they generally are not of a very high standard or else they run very slowly.

DODGY DRIVE



When I put a disk in the drive it makes a loud whirring noise, and nothing loads unless I lift the disk at an angle.

Stephen Dewar, Edinburgh

stf: This is going to sound like a lot of the other replies, but take your machine to be examined and repaired. There should be no reason to physically move a disk while it is in the drive – in fact, this could cause damage to the drive mechanism if you are not careful. Although some drives do tend to be on the noisy side, this does not necessarily mean that the drive itself is faulty – but your loading problem suggests there is definitely something wrong. Find a local dealer who offers a repair service or contact someone like Evesham Micros (☎ 0386 765500), who offer a fixed rate repair service for £65.00.

NO RECORD



I have recently bought *Quartet* and am having trouble recording music and voices. Could you tell me what leads I need to make a recording?

Alex Scally, Wirral

stf: *Quartet* is not a MIDI sequencer; it's a sample sequencer with various limited MIDI options. It is a step-entry sequencer, which means that you cannot record notes in real time, only input notes from a MIDI keyboard and see them appear on the ST screen. However, it cannot play back via a MIDI keyboard.

The audio is output via various means. The sound automatically appears at the monitor speaker with any ST, but the STE has the additional advantage of two audio outputs which can be connected to a hi-fi amplifier and speakers, giving much better sound quality and in stereo. You can also buy any of the Microdeal or AVR cartridges such as the Replay series, which plug into the ST's cartridge port and give you still better quality playback.

GAMES TOO HOT?



After about one hour of games playing, the sound on my 1040 STE disappears. Sometimes I get an electrical crackling from the power switch. There is no other electrical equipment in the room and the sound returns if the machine is left for an hour.

S Cowell, Blackpool

stf: This sounds like a thermal problem leading to an integrated circuit failure – possibly the sound chip itself. It is very unlikely that it has anything to do with the power supply unit. Is it still under warranty? If it is, return it to the retailers and they are obliged to repair it for

you. If it is not under warranty, speak to the Atari Workshop ☎ 071 708 5755.

SOUNDS BETTER



I have an STFM and a TV, but I don't think much of the sound quality. How can I connect the STFM to my hi-fi amplifier and speakers?

Michael Devrell, Bristol

stf: The sound on an STFM usually comes from the speaker in the monitor but can also come from the TV because the sound is transmitted as part of the modulator signal. To divert the sound to an amplifier, you need to tap into the audio output at the monitor output from the ST. This is at pin 1, while the ground is at pin 13 (look in the back of your Atari ST manual). You need to make a small box with two 13-pin sockets and a phono socket along with a short 13-pin to 13-pin connecting lead to connect the box to the monitor output from the ST.

Wire the two 13-pin sockets together, pin for pin, and connect pin 1 to the top end of a 100Kohm potentiometer and pin 13 to the other end. The middle contact, or wiper, then connects to the inner contact of the phono socket, while the outer contact must be connected to pin 13 as well. If you want to remove the sound from the monitor, simply disconnect the lead from pin 1 going between the two 13-pin sockets, but make certain that pin 13 is always connected. If the level is too high, you may need to put a resistor in series with the output.

Ready-made boxes do exist, but we haven't seen any for a while.

PLEASE, SIR, I WANT SOME MORE



I own a Yamaha PSR-500 keyboard which has Advanced Wave Memory sounds. Is there any way I can alter the sounds? Also, it doesn't have a MIDI Thru port – is there any way around this?

Myles Houghton, Uckfield

stf: The Yamaha PSR range of synths only have preset sounds – there is no voice editing facility on any of them up to the PSR-6700.

You can get a relatively cheap MIDI Thru box from your local music shop: ask for a Philip Rees V3, which should cost you less than £14. If your local shop can't help you, contact Philip Rees directly on ☎ 0608 811215.

AND KICK OFF, TOO



I'm an avid player of Kick Off 2 and I'd like to acquire more games in a similar vein. I've noticed a couple of games called Passing Shot and PGA Tour Golf for other machines – are these out for the ST?

Mark Gardiner, somewhere in England

stf: Passing Shot was a Mirror Image title, so it's unlikely to be available now since Mirrorsoft have gone down the pan. PGA Tour by Electronic Arts definitely won't be coming out on the ST. However, you might like to have a look at: MicroProse Golf by, um, MicroProse (the best golf sim ever anywhere), Formula One Grand Prix, also by MicroProse (superb racing sim),

Jimmy White's Whirlwind Snooker by Virgin (incredibly realistic snooker sim) and the forthcoming Sensible Soccer by Renegade.

IT'S JUST NOT HAPPY



I have a problem with STOS. The program does not work properly on my new 520STE which is upgraded to 1MByte. When I try to run the program from the AUTO folder, most commands are greeted with "Address Error" or "Bus error." Break (<Control>-C) doesn't work and the mouse and break still do not work. I know the software is not at fault because it works with my friend's 520STE and another friend's 520STFM. Could the memory upgrade in my ST be faulty? All other programs seem to work. Please help!

Iain McKenna, Glasgow

stf: It seems that you have a basic problem with your machine – it is not likely to be caused by the version of STOS you are running and it does seem strange that other software works okay on your machine, but STOS doesn't. Return the machine to where you purchased it and had the upgrade fitted and explain the problem to them. Your machine is still under warranty so it should be repaired or replaced free of charge.

INFECTION WANTED



Where can I get a game called Virus for my STE?

Andrew Palmer, Glasgow

stf: Unfortunately this fine game is no longer generally available. You might be able to get it second-hand or at a bargain price from a software retailer. How about re-releasing it on budget, Microprose?

PRAY COMPOSE YOURSELF!



I have just acquired a 1040 ST with the purpose of composing and printing out multi-tracked music in conventional staff notation. Is there a cheaper program than C-Lab's Notator to enable me to do this?

D C Woodman, Brighton

stf: As you are probably aware, C-Lab Notator sells at £550 and is the best combined sequencing and scoring program on any micro. But there is also Son of Notator – or, more correctly, Notator Alpha, which sells at £225 and



READERS' TIPS

SPECTRUM TO ST FILE CONVERSION

In STF 34 we stated that we knew of no way to transfer Spectrum programs to the ST for use in the Spectrum Emulator program. Well, someone does know and there is now a conversion program available on Floppypshop disk ST-1025 along with instructions for making a simple lead to connect between the ear socket of a tape recorder and the parallel port of the ST. The disk costs £2.50 and you can contact Floppypshop on ☎ 0224 312756 for further details.

enables you to notate up to eight staves at the same time. It also lets you chain together patterns so that you can write music in a pattern-based mode if you want to, like its big brother.

While it can output MIDI Clock to enable you to synchronise a drum machine to it, Notator Alpha doesn't respond to MIDI Clock from another source – in other words, it always has to be the master. If you cannot find Notator Alpha in your local shops, contact Sound Technology on ☎ 0462 480000. See also STF's roundup of score-writing packages in issue 29 – if you missed that, turn to page 64.

EFFECTIVE ST?



Could the ST be used as a real-time effects processor similar to the Zoom 9000? This is 16-bit and costs £260.00, so surely it has less memory or processing speed?

D Whitham, Sheffield

stf: There are many cheap effects processors – you can buy a secondhand Alesis Midiverb 2 for around £130.00 – it has 100 effects with a mixture of reverb, delays and chorus. Generally, such budget units have limited RAM and a relatively poor processor, but they are designed to perform a specific task. Algorithms have been created to make the reverbs sound natural, while the amount of RAM directly affects the length of the available delay.

If there were a program for the ST which could access the RAM for effects purposes your ST could be used for real time effects, but, as far as we know, this has not been done. The



The question is, how do you print?

COLOUR QUERY

On a colour printer, do you have a ribbon with lots of different colours on it or do you have a different ribbon for each colour?

Tony Moxham, Hants

stf: On a colour dot matrix printer, the ribbon is made up of bands of differing colours. Colour plotters use four different colour pens, and colour inkjets use several reservoirs of different coloured inks.

CALAMUS DRIVER

Where can I obtain a printer driver for the DTP program Calamus to drive my Amstrad LQ5000di printer? The Epson FX80 driver works, but the output is elongated and over-runs the paper.

K P Smith, Lincs

stf: The official distributor for Calamus is now Halco. You can contact them on ☎ 0734 441525 for information on Calamus printer drivers and upgrades.

SIMPLY THE BEST RAM BOARDS

Eureka Atari RAM expansion boards are quite simply the most reliable and inexpensive RAM products available. They offer the user the simplest form of installation and come complete with full instructions and a RAM checker. Available for all 520/1040 ST's, STFM's. They will even upgrade machines that have both conventional and S/Mount MMU's.

ATARI HARD DRIVE RELATED PRODUCTS

ICD DMA/SCSI Hard Drive Controller
connect any SCSI drive to your ST!£89.99

ICD DMA/SCSI Hard Drive Controller
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DMT 3527 A SCSI/ST506 Hard Drive
Controller. Connect ST506 drive£79.99

AZTEC 65 Watt Case P.S.U.£34.99

45 Meg 20 Milli SCSI Hard Drive£149.99

75 Meg 20 Milli SCSI Hard Drive£169.99

105 Meg 20 Milli SCSI Hard Drive£274.99

210 Meg 20 Milli SCSI Hard Drive£395.99

ATARI VIDEO GENLOCK'S



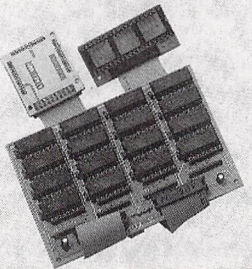
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Battery-Backed Real Time Clock for ATARI.
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Internal 512KB/2Mb RAM card for ATARI.
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1040 ST/STFM
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OTHER ATARI RELATED PRODUCTS

Atari Real Time battery-backed clock
with pass through and software£18.99

Atari 512k - 1040 plug in solderless
RAM expansion£39.99

Atari 512k - 2.5 meg solderless
RAM expansion£89.99

Atari 512K - 4.0 meg solderless RAM
expansion£159.99

Atari 512k - 1040 solder-in RAM upgrade
+ RAM Tester£29.99

Atari 512k STE - 1040 STE solderless
plug in upgrade£29.99

Atari 512k STE - 2.5 meg solderless
plug in upgrade£79.99

Atari 512k STE - 4.0 meg solderless
plug in upgrade£149.99

Atari 400 D.P.I Hand Scanner
with software£79.99

Atari High Res colour scan kit allows your
existing scanner to scan in full colour£79.99

Atari mouse/joystick switchbox£17.99

Atari mono/colour switchbox£17.99

Atari LED Trackball, lights up when
button is depressed£29.99

Atari 2 button microswitch mouse£9.99

Atari 300 D.P.I. switchable
ST/Amiga mouse£14.99

GFA - BASIC and GFA - DRAFT

GFA-BASIC for the Atari ST is also compatible with GFA Basic MS-DOS and GFA Basic Windows 3.x. This means you can write a program on your Atari ST using over 500 syntax compatible commands and then run it on MS-DOS or Microsoft Windows. GFA-BASIC MS-DOS even has the ability to emulate the Menu and Window mechanism (with the window functions).

For those more interested with CAD, we have retained compatibility with the Atari ST to allow GFA-Draft drawings to be loaded directly into GFA-CAD for Windows 3.x.

We support our existing registered users by offering a 25% discount off our MS-DOS and Windows Products.

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Berkshire, RG11 5XT.

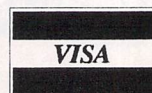
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READERS' TIPS

SAMPLE THIS, MATE

In STF 16 you featured a program called HAL9000 which when placed in the AUTO folder played a sample when you booted your machine. You can simply replace the file HAL9000.SND with any other sample you may have. Just rename the file HAL9000.SND to HAL9000.SNX and the new sample to HAL9000.SND.

Malcolm Begg, Stonehaven

➔ closest is the real time effects page you get in various forms of AVR's Replay samplers.

NEODESK BOOT-UP



How do I boot up using the new Desk-top in NeoDesk 3? Do I have to put it in an AUTO folder, and if so which files do I put in the folder?

G Elliot, Barrhead, Glasgow

stf: The installation method is laid out clearly in the NeoDesk manual. This is how you set it up on a floppy based system on an STE. Place the file called NEOLOAD.PRG in the AUTO folder. All the Neo Accessories and their .RSC files have to be in the root directory – that is, not in a folder. All the other files should be in a folder called NEODESK3. Reboot the machine with this disk and NeoDesk automatically loads and runs.

GFA DRAFT PROBLEMS



Paul Crawford of Ipswich and Si n Artingstall of Londonderry are among several people who have noticed that when they load GFA Draft

Plus 3 (which was yours with STF 24) the menu options overlap and the program is unuseable. This is caused by running the program in low resolution. GFA Draft must be run in medium res on a colour system in order to work correctly.

NTSC COMPATIBLE?



I have a 1040STFM which I bought in Sweden. Now I live in Chile I cannot use it with a TV because the local standard is NTSC, not PAL. Is there any way I can use my ST here?

Goran Nordling, Temuco, Chile

stf: The only possible ways for you to be able to use your machine are to get an Atari SC1224 colour monitor or obtain a PAL standard TV. It would probably be easier to get the monitor than a PAL TV, but unfortunately we don't have the address of any Atari dealers in Chile.

SKEWED? ME?



I have noticed that some formatters offer Normal or Skewed options. What is the difference between a normal disk and one that has a skewed format?

Greg Hammill, Aintree, Liverpool

stf: When a disk is formatted the sectors on a

track are normally laid out in sequential order – sector 1, 2, 3 and so on. When reading data from a track the disk has to make at least one full revolution of the disk between reading sectors. This is because the read/write head of the drive doesn't have time to start reading the data from sector 2 after finishing reading sector 1 – it has already passed the start of the sector. If the sectors are laid out in a different order (sector 1, 7, 4, 2 and so on) then the drive head has time to start reading the data on the next sector as soon as it has finished reading the previous one. This "skewed" format speeds up the data reading process.

SIP IN THE MACHINE



My STE has SIPs – soldered-in memory packages – instead of SIMMs – plug-in memory chips. Is anything else likely to be non-standard in my machine?

Ivan Boyle, Motherwell

stf: No, everything else in your STE should be standard equipment. There were only a few shipments of the STE which had the non-standard memory installed.

FLOPPY DESK REQUIRED



Is there any way to run NeoDesk 3 without a hard drive?

Michael Green, Ettrick, Selkirk

stf: Yes, you can run it from floppy disk although a twin drive setup is recommended. If you have more than 512K of RAM installed in your machine you can configure NeoDesk to be memory resident so you don't have to keep putting the NeoDesk boot disk back in the drive after running programs. See the memory upgrade article in STF 34 for details of increasing your machine's memory capacity. (If you missed that issue, turn to page 64.)



Who gives a TOS?

● I have been getting strange messages from my ST with some programs. What is TOS Error #34 or TOS Error #39? I am quite new to using the ST and I am completely baffled by these messages.

M Kahn, Swindon, Wilts

● When I tried to run a game recently, a box appeared with the message TOS error #35. What does this mean? Where can I find a list of the TOS errors?

Robert Parr, Allerton, Bradford

stf: The TOS Error messages are your machine's way of telling you that it has a problem with the software it is running. Unfortunately the Atari manual doesn't tell you what the messages mean. Here is a complete list of the infamous TOS Error Messages.

Error number Message

- 1.....General error
- 2.....Drive not ready
- 3.....Unknown command
- 4.....CRC error – disk checksum wrong
- 5.....Bad request
- 6.....Seek error – track not found
- 7.....Unknown media – bootsector wrong

DIFFERENT DISKS



Why is it that when I try to make a backup copy of my Write On Cover Disk from STF 33 my ST says that the destination disk is different from the source disk? I am also having the same problem with the GFA Draft Plus 3 Cover Disk from issue 34.

Philip Spavins, Redruth, Cornwall

stf: If you attempt to copy the ST FORMAT Cover Disks by dragging the Drive A icon to the Drive B icon, this problem occurs. This is because the standard ST disk format is 80 tracks and 9 sectors and our Cover Disk format is 80 tracks and 10 sectors – to give you more for your money. The ST's operating system cannot perform a disk copy between disks with different formats. The solution is to use the backup option in Write On's WO_HELP.PRG or to use the BACK_UP.TOS program we include on every Cover Disk for your backing up convenience.

UNKNOWN TOS VERSION?



When I select System Info from the Fontkit Plus v3.41 demo it informs me that I have TOS v1.9. I thought the latest version of TOS for the STE was

v1.62.

John Doherty, County Clare, Eire

stf: You are getting this TOS number because the routine in the program reads the bytes containing the TOS version number incorrectly. You have in fact got version 1.62 of TOS. There are several PD programs which also give this version number error.

POCKET TIP



I'm stuck in Section One of Magic Pockets. I can get as far as the cave under the bike, but can't get up through the ceiling to reach it. Your guide (STF 31-

- 8.....Sector not found
- 9.....Out of paper
- 10.....Write fault
- 11.....Read fault
- 12.....General error 12
- 13.....Disk write-protected
- 14.....Media change detected
- 15.....Unknown device
- 16.....Bad sector (verify)
- 17.....Insert other disk (request)
- 32.....Invalid function number
- 33.....File not found
- 34.....Path not found
- 35.....Too many open files
- 36.....Access denied
- 37.....Invalid handle
- 39.....Out of memory
- 40.....Invalid memory block address
- 46.....Invalid drive specification
- 49.....No more files
- 64.....GEMDOS range error – seek wrong?
- 65.....GEMDOS internal error
- 66.....Invalid executable file format
- 67.....Memory block growth failure

READERS' TIPS

DMA I.D. EXPOSED

Jorge H E Gouveia from Portugal has a tip for identifying the possible faulty DMA chips in early STEs. The faulty chip has the number C025613-38, PH23-030 printed upon it. The good chips are numbered C398739-001A (Atari-1990)-31. Remember it is only some of the early STEs which suffered from this problem - any machines bought in the last 18 months should be fine.

33) says "jump up and spin." What does this mean?
James Page, Norfolk

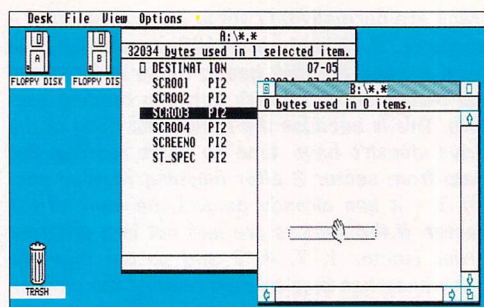
stf: Use the "spin" technique: generate a large whirlwind, stand in it and press the down cursor. You then spin wildly through the ceiling and into the bike section.

COPYING PROBLEMS

I only have one disk drive and when I try to copy a program from one disk to the other on the screen it never works. What is wrong?

David Barrett, St Peter Port, Guernsey

stf: Copying files from one disk to another is a



● Copying a file from drive A to drive B on a single floppy system.

bit of a pain because of the number of disk swaps required. Follow this simple guide for pain-free file copying. All clicking is performed with the left mouse button.

- 1 Prepare a disk to put the copy of the files or programs on, and format it if necessary. Mark this disk "Disk B" to prevent confusion later.
- 2 Mark the disk you wish to copy the files from "Disk A".
- 3 Close any windows which are open on the GEM Desktop.
- 4 Put Disk A in the drive and double-click on the Drive A icon. A window opens showing the disk's contents.
- 5 Now double-click on the Drive B icon. A message appears in an alert box telling you to put Disk B in Drive A. Do this and then click on the OK box. A window opens showing you the contents of Drive B, which should be empty.
- 6 Click once on the Drive A window so it

becomes active (with all scroll bars present). Click on the file you wish to copy and hold the button down. Move the mouse so the dotted outline of the file is over the Drive B window and release the button.

7 An alert box appears prompting you to put Disk A in Drive A. Click on the OK button when you have done this. Your ST continues to prompt you to swap disks until the file is transferred.

8 Repeat the process for any other files you wish to copy.

KEYSHOW QUERY



I cannot get the Keyshow program from STF Cover Disk 34 to work with Write On even though I followed the instructions as printed. Could That's Snap be affecting it in some way or am I mucking it up?

George Elliott, Redcar

stf: That's Snap does not have any adverse effect on the Keyshow Accessory. To run the Accessory you need to transfer the Keyshow files to the Write On boot disk and place them in the root directory (not in a folder). The only other Accessory that should be run is That's Snap - any other Accessories may affect the operation of Write On and Keyshow. Switch off your machine and switch on again after about 30 seconds with the Write On working disk in the drive. You should now be able to use the Keyshow program to study the fonts supplied.

Talk to the whole wide world

I have data files on my old BBC computer and I need to transfer them to my ST. Can you tell me how to construct a Null Modem lead to link the machines? I already have the relevant comms software.

J Evans, Leicester

stf: Many people who now own the ST have upgraded from an 8-bit machine or own different non-compatible systems, such as the PC-contemptible or the Amiga games machine. The trouble with having different systems is that they have different media formats, or even 5.25 inch disks or tapes, making data transfer a real hassle. Even if the machines use the same type of media, such as 3.5 inch floppies, they are almost invariably formatted to different standards and so are unable to read or write each other's disks. (The ST can however read standard 3.5 inch 720K PC-format disks - and the STE can even format them.)

This guide shows you how to transfer files between various types of machines by means of a "Null Modem" lead connected between the machines' serial ports. A Null Modem is not in fact a modem at all, it is simply a lead running from one machine to another via the RS232 port to facilitate the transfer of data by means of comms software.

The software used for the ST is freely available from PD libraries: Uniterm and Vanterm. RS-232 settings should be set as follows, unless stated otherwise: 1200 baud, RTS/CTS on, no parity, 8 bits, 1 stop bit, full duplex.

1 SINCLAIR SPECTRUM TO ATARI ST

It is possible to transfer Sinclair BASIC programs to the ST via the Sinclair Interface One and its 9-pin serial socket. Set up your ST software to receive an ASCII file at 1200 baud, no parity, 8 bits, one stop bit. Load in the Sinclair BASIC file you wish to transfer and then break into the program.

To set the baud rate and transmit the program on the Spectrum enter the following in direct mode:

```
FORMAT "t";1200
OPEN #3;"t"
LLIST
```

The program is now listed as an ASCII file via the RS-232 port. All Sinclair BASIC tokenised commands are converted to their ASCII equivalent. If you use a Spectrum word processor or other application that produces printed output, it is a simple matter to edit the BASIC listing so that the output is directed to the RS-232 port and hence to the ST. Simply add the FORMAT "t";1200 and OPEN

#3;"t" commands to the start of the program and all LPRINT commands are transmitted via the RS-232 port. The diagram is for Spectrum to ST transfers only.

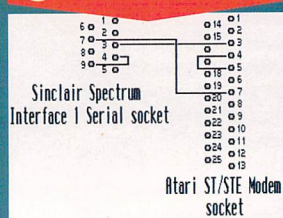
2 CAMBRIDGE Z88 TO ATARI ST

For file transfers to and from the Z88, Pipedream import and Export options are ideal for the Z88 end. This can be complemented at the ST end by a GFA Basic program called ST-Link, which enables you to make transfers directly between 1st Word and Pipedream files with all style codes retained. The program also enables data transfers in Lotus 123 format as well as straight ASCII. However, if it is simple transfer of ASCII files then a dedicated comms program for the Z88 should be used in conjunction with Uniterm or Vanterm on the ST.

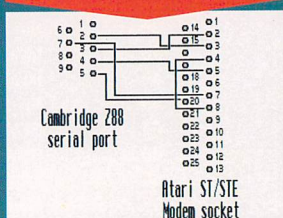
3 MAC PLUS/MAC CLASSIC TO ATARI ST

There is plenty of comms software available for the Mac, both PD and commercial. Because most Mac comms packages cater for XModem, this file transfer protocol can be used for error correction and the baud rate can be increased to 9600 or 19200 without any problems. Remember that file transfers can be made in both directions between these machines and that some Mac picture

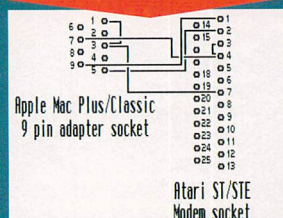
1 ST to Spectrum



2 ST to Z88



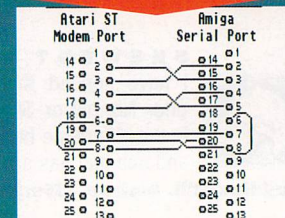
3 ST to Mac Plus



4 ST to Apple 2



5 ST to Amiga



CONTROL PANEL



I have a 520STE and I noticed in your graphics feature in STF 34 that there are 16 possible levels of brightness for each of the red, green and blue sliders. The disks I received with my STE (ST Tour and ST Basic) have a Control Panel Accessory supplied, but the sliders are numbered 0 to 7. The shop where I bought my machine has closed down, so where can I get the correct Control Panel Accessory?

Sue Cliff, Torquay, Devon

stf: The best course is to get a replacement Accessory from a PD library. The ST Club (☎ 0602 410241) can supply the new Xcontrol Accessory for the Mega STE, TT and machines with TOS 2.06 installed on disk DMG.25 for £1.45. This Accessory can also run on the STE without causing any problems. Alternatively you can contact Atari themselves on ☎ 0753 533344 – they should be able to provide the original STE language disk you need.

LEVEL 4 IS JUST A
BFD FE31001EBO AWAY

How do I get past Level Three of The Immortal?

Daniel White, Stowmarket

stf: Er – use the level code for Level Four, which is BFD FE31001EBO. (All right, so it's not quite the same thing as completing the level...)

PASS THE PORT



① You often refer in articles to games being “ported” from another machine. What do you mean by this and how is it done?

② Can a mono emulator do any damage to an ST's internals?

Martin White, Southampton

stf: ① The term “ported” is usually used with games that come out on both the ST and the Amoeba games machine. Because both machines have a 68000 processor as their main Central Processing Unit, code written to run on the ST should run on the Amoeba, and vice versa. When a game is ported, the game code is transferred from one machine to another and only the machine-specific parts of it changed – sections that deal with the colour palette or sound, for instance. In practice, of course, a ported game takes quite a bit of work to get running on the target machine, which is why software houses are usually somewhat conservative with their estimates on how long it is

likely to take to convert a game to the ST.

② No. (Why? What have you done?)

GAMES WITH FRONTIERS,
EH?

I have an internal single-sided disk drive. I've just bought an external double-sided drive and find that commercial games don't run from it. How can I load these games?

Alan Freeman, Durham

stf: There's no simple way to get them to run. Games always expect to boot from drive A unless programmed differently. There is a method which involves fitting a “boot switch” to your ST to enable you to switch between drives A and B to boot from, but it's not something for the faint-hearted to attempt. Quite frankly, you'd be better off buying an internal double-sided drive. Power Computing (☎ 0234 843388) sell them for £35.00 or £45.00 – the price depends on the age of your machine.

...AND A PACKET OF
CRISPS, PLEASE

About 12 years ago the arcade games of Astro Fighter and Moon Cresta were doing the rounds in the pubs. Are they available for the ST?

S G Pears, Notts

stf: What, pubs? Oh, you mean the games. No. Not as far as we know. If anyone knows different, please feel free to write in and tell us.

BENDY MIND THING



Is there a Zak McKracken and the Alien Mindbenders Hint Book? Where can I get it?

Ben Cranfield, Buckingham

stf: US Gold sell a hint book for £5.00. They live at Units 2 & 3 Holford Way, Holford, Birmingham B6 7AX ☎ 021 625 3366.

IT TAKES MORE THAN AGES



I have a question concerning a particular Sega game, Sonic the Hedgehog. When's it coming out on the ST?

Anthony Walton, Nottingham

stf: Sega are very reluctant to convert Sonic to any home micro format, including the ST. It seems unlikely that we're ever going to see the

READERS' TIPS

WRITE ON
SHORTCUT

You may have noticed it takes some time to load in all the fonts in Write On every time you run the program. All you have to do is define a macro to do this job for you. The macro records key presses and ignores any mouse activity.



1. Run Write On and press <Shift> and <Esc> to begin recording the macro and then press <F>.
 2. Now press <Control> and <T> at the same time, then type in the font name and press <Return>.
 3. Press <Control> and <T> again and press <Esc> to clear the font name previously entered.
 4. Type in the next font name to be loaded and press <Return>.
 5. Repeat the process until you have entered all the fonts you wish to load. Finally press <Shift> and <Esc> to finish defining the macro.
 6. Use the Save Macro function from the Options menu and save your macro to your working disk. Upon loading Write On in the future, load the macro from disk using the Load Macro option. All you have to run the macro is press <Esc> and then press <F>.
- Garry Squires, Wallasey, Merseyside

blue devil on the ST. But there are plenty of platform games around which are just as good if not better: try Harlequin, Robocod or Titus the Fox. (Personally I think Sonic's overrated anyway. Give me Guybrush Threepwood any day.)

MEMORY... ER, WHAT WAS
THAT AGAIN?

I'm going to upgrade my ST to 1MByte. Do I need a 1MByte disk drive? If not, what are the advantages?

Bernard Blackham, Cheshire

stf: No, you don't need to worry about your disk drive at all. 1MByte of memory gives you more room for running serious applications (some of which, like Pagestream 2, need a minimum of 1MByte to run anyway), enables you to play some very good games that need the extra memory (Populous 2 and Grand Prix spring to mind), and is a very desirable and wonderful thing to have.

COMPLETE CHAOS



I have completed all 14 levels of Dungeon Master, but I don't think I've killed Lord Chaos. He just disappeared after I attacked him with a combination of the firestaff and powergem. Now I'm able to wander aimlessly throughout the dungeon and am not able to escape. Please help! I am desperate.

Shaun Johnson, Plymouth

stf: You guessed right, Lord Chaos is still on the prowl. You find him and his tentacle-armed minions in the big room filled with pits on the penultimate level. To cook his goose permanently, you need to surround him in “flux-cages” and then “fuse” him with the firestaff. Cue a little end sequence and then it's game over. Congratulations!



Operation Stealth hassle

● After getting briefcase 2 from the bank, I keep getting put in the cave. I can get untied, but... help!

Danny Dusseldorf, Devon

stf: (Danny Dusseldorf? You sure?) Operate the ground, examine the part of the wall where the breeze is coming from. Operate the pickaxe three times on the wall.

● I've gone into the toilet cubicle right at the beginning

to make a passport, got into the case's secret compartment, clicked on everything – and nothing works!

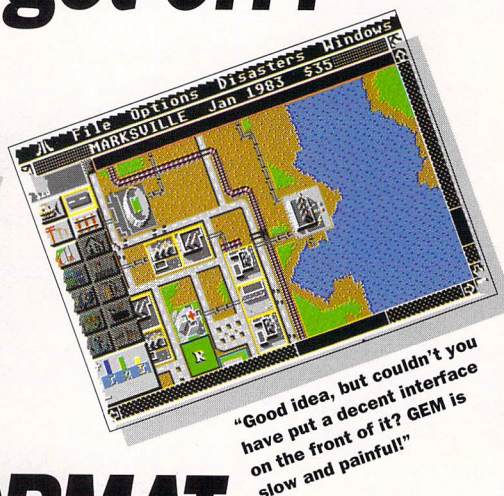
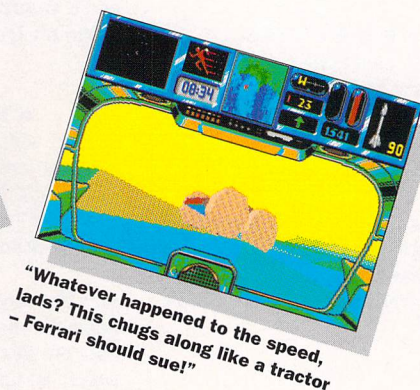
Michael Head, Bournemouth

stf: Try this: operate briefcase, take pen, take American passport, operate calculator, take unused passport. Operate “up” arrow button until the correct passport appears. Use unused passport on opening. Press red button, operate briefcase.

ST FORMAT



**Ever thought you could
tell the games programmers
where to get off?**



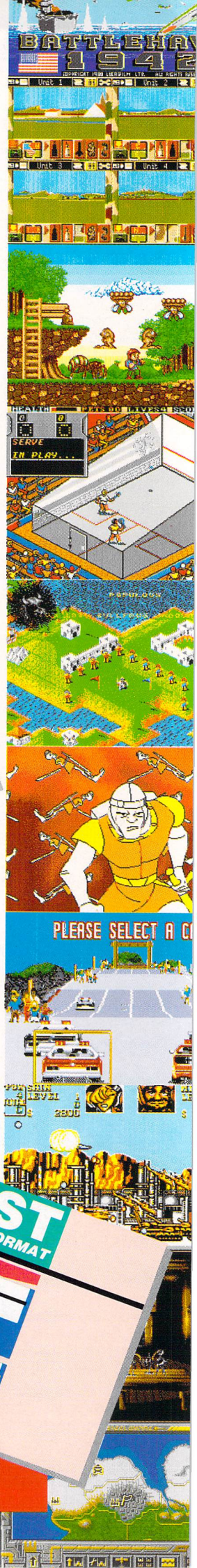
**Next month's ST FORMAT
could be your chance!**

We're finding out what makes a great game, what the big sellers of all time have been and how you can make money with your game ideas. Then we're giving the programmers a chance to tell us what *they* think makes a great game. Plus, we're tying all this in with an amazing second Cover Disk program which will get you on your way to writing your own great games!

Plus, we've got a roundup of seven of the latest ST monitors, an in-depth guide to a new 3D modeller on next month's main Cover Disk and a detailed review of *Calamus SL*. All this and more of *ST FORMAT*'s great regulars - ST Answers, Gamebusters, the latest game reviews, serious software and hardware reviews and the latest news.

Beware of imitations

NEXT ISSUE ON SALE THURSDAY 9 JULY





STOS programmers' surgery

More of your STOS problems solved by Asa Burrows

NOT SPRITE RIGHT

I can't get the sprite editor to work with the STE extension (STF 32) installed, so I'm unable to use the extra colours in the palette. What am I doing wrong?

Andrew Camobell, Midlothian

stf: We have been unable to duplicate whatever you are doing wrong – our machines had no trouble using the sprite editor with the STE Extension. The only possible explanation we can find is that you could be running out of memory in the sprite editor on a 520STE. More importantly, the sprite editor wasn't written to make use of the extra colours in the first place, so unless you are planning on changing your program to take advantage of the extra palette colours in your sprites on the STE, you would be unable to use the extra colours anyway.

SPEECH THERAPY

Is there any way to get sampled speech within a STOS program on an STE? If there is, how should I go about it?

Dan Smith, Edinburgh

stf: You can use a sampling package like STOS Maestro or Master Sound to make samples of live speech, and then use the STE Extension commands (on STF Cover Disk 32) to replay the samples directly through the Digital to Analog Converter (DAC) in your STE without taking up processor time. This enables other processes to continue while the sample is being played.

TRACKER TUNES

I need a program to enable me to load and play Tracker tunes in STOS Basic. Where can I find one?

James Quinney, Fife

stf: There is a PD extension called STOS

Tracker which can do what you want. It is available from Goodmans PDL (☎ 0782 335650) on the disk called BAS 25 and costs £2.75.

SCROLL ON

I am having difficulty scrolling through several screens when I make games. I used Neochrome to design my picture for the backgrounds. Should I use this? What am I doing wrong?

Ben Passey, Merseyside

stf: The best method is to use the map definer you get with STOS. This enables you to create backgrounds made up of 16 by 16 tiles. In this way, you can create a series of tiles and place them in your program to make a seemingly continuous background. It is not really a good idea to use full size pictures created with art packages such as Neochrome to create background scrolling because this takes up a lot of memory.

BACKUP PROBLEMS

How can I back up STOS? I tried using the ST's Desktop copier as in the manual and Procopy, but when I loaded the copy all I got is the orange bit at the top of the STOS logo.

Luke Chatburn, Oxford

stf: The most probable cause is that there is a problem with your original STOS disk, or there may be problem with the disk drive on your ST. Try to back it up on a friend's machine to check where the problem is.

STRING QUARTET

Is it possible to import songs from Microdeal's Quartet into STOS Basic programs? If so, how do I go about it?

Steven Ball, Manchester

stf: In the directory SINGSONG on the second Quartet disk there is a small program called SINGSONG.PRG which you should load into any

of the program banks – apart from the reserved ones – within your STOS Basic program. Load EXAMPLE.BAS from Quartet – this contains a BASIC listing which shows you how to load and play a song. Follow the instructions in the Quartet manual and you will be able to play the song. Don't forget to create your song with Quartet first.

IMPOSSIBLE DEMAND

Can you convert STOS .PRG files back into .BAS files? Also is it true that TOS 1.4 owners should avoid non-STE compatible programs?

James Marson, S Yorks.

stf: It is impossible to convert a .PRG file back into a .BAS file. It is not true that STOS is not compatible with TOS 1.4. You should update your version of STOS to 2.6 so that any programs you write will work on the STE. Goodman PDL can supply you with a free STOS language update if you send them a blank disk. (They're at 16 Conrad Close, Meir Hay Estate, Longton, Stoke on Trent, Staffs ST3 1SW.)

KEYPRESS QUERY

How do you determine which function or arrow key has been pressed? I find that these return an ASCII value of 0. How do I get around this from within STOS?

John McKechnie, Scotland

stf: The keys return 0 for the ASCII code – you need to check the Scancode of the keys. You can do this by using the Scancode command which is fully documented in the STOS Basic manual. The FKEY command enables you to jump to a subroutine directly on any function key or shifted function key.

EXTENSION PROBLEMS

How do I get the STOS STE extensions that were on the Cover Disk in STF 32 into the STOS folder of the language disk? I've tried to change the file extension .EXF but this does not work. The extensions are not accepted by my ST. What am I doing wrong?

Mr D Rathod, Lincs

We can't tell what you are doing wrong from your letter, but these are the main points to check:

1. Have you copied the extensions into the right directory? The .EXF file goes into the STOS folder on the STOS language disk and the .ECF goes into the Compiler folder on the Compiler disk.

2. Do you have any other extensions using the same extension .EXF/.ECF? If you do, give them a different extension name. This name must be .EXn for the STOS folder and .ECn for the Compiler folder. Replace "n" with a different letter that is not used by another extension in your folder, but not the letter "B". The letter for the Compiler folder's version must be the same as the interpreter – .EXF in the STOS folder and .ECF in the Compiler folder.



STOS and Neochrome

SPRIGHTLY ADVICE

How can I get sprites to move over a background that I have created in Neochrome?

Martin Wright, Plymouth

stf: Reserve a datascreen and load your Neochrome picture into it as follows:

Reserve as datascreen 5

Load "picture.neo",5

Use the screencopy command to copy the picture to both the background screen and the physic screen.

Screencopy 5 to back

: screencopy back to physic

Now set up your sprites in the normal manner and animate them using the Move command.

I KEEP SEEING THESE STRANGE COLOURS

Can you tell me how to stop the writing going red after I load a background picture from Neochrome when I use STOS to make games?

Robert Smith, Dorset

stf: This happens is because the NEO picture has a different colour palette from the one used to create the sprites. You have to use the same palette for creating sprites and backgrounds in order to retain the original colours. This applies no matter what package you are using for the backgrounds. Use the Palette command to set the desired colours from within STOS.

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MP18 - 35 Calamus fonts. £8.50.
MP26 - 32 Calamus fonts. £8.50.
CPFC - Printed catalogue of all fonts in MP9, 10, 15, 18 & 26. £3.00.
Special Offer! Save 10% MP9, 10, 15, 18 & 26 for only £38.25.

OTHERS

MP8 - GDOS Font Pack 1 contains 171 fonts and some utilities. 3 disks £8.50.
A235 - **Pagestream** Outline Font Editor.
A25/A60 - **Font Master** excellent document processor with fonts £6.
A45 - **Star** N/LC Font Designer v1.1 includes 21 fonts.

EDUCATION

MP16 - **UNDER 10'S EDSOFT PACK 1** - many excellent programs full of colour and music for under 10's covering the following subjects: Shapes, Puzzles, Songs, CreateStories, Drawing, ABC, Mr Potato Face, KidDIP, Graphs, Grids, Music, Niles, Spelling and Piano. £8.50.

MP25 - **UNDER 10'S EDSOFT PACK 2**

Robot Attack V1.0 a brilliant maths space game. Moon Letters V1.0 a good game like environment for spelling. PICTURE MIX 6-v1.0. Robot Words V1.0 Hangman brought up to date, spelling played over 3 levels. Alphabet Mix is a computer version of one of the old alphabet jigsaws. All Blocked Up age 5+ a maths game. £18.
MP17 - **OVER 10'S EDSOFT PACK** - many excellent programs, for age 10 plus, covering the following subjects: Understanding Algebra, Understanding Geometry, Understanding Ratio, Understanding Trigonometry, Ship Wreck an adventure scenario for teaching maths at all levels. World quiz about most countries and their capitals all over the world. Chemical Structure interpreter, Elements Periodic Table, Maths Test, Numerical GoRound. £8.50.

B98 - **STATES AND COUNTIES** an ideal way of learning counties in England, Wales, Scotland, states in America. £3.
S57 - **DROP DOWN WORDS** an excellent spelling game for children upto 6 years of age. £3.00.

S58 - **WORD RACE** a good spelling program that is kind of based on hang man. £3.00.

BP26 - **EARLY LEARNING MATHS 1** For primary aged children. A mega collection of simple maths games. £4.00. Includes a printed manual.

BP27 - **EARLY LEARNING MATHS 2** 4 games one step on from ELM 1. £4.

QR32 - **Point Book** a children colouring book on screen!

BP17 - **SPLASH** is an art package for 3 to 10 year olds £4.00.

BP18 - **Fun Time 1/2** age 3-6 £4.

BP10 - **Classroom Maths 1** age 7 to 12 4 scenarios to teach maths. £4.

BP21 - **Classroom Maths 2** a new disk for use with BP10. £4.00.

A234 - **Chemistry!** Age 16 Plus.

A193 - **Wiz Tek** DK Computer School - Maths, Spelling and Memory.

PROGRAMS

MP7 - **HOME BUSINESS PACK** contains Datahandler and FirstBase 2 databases, STSheet and Sheet 2 excellent spreadsheets, STWriter Elite the word processor and Double Sentry (NOTISTE) the accounts package. £8.50.

MP24 - **HOME BUSINESS PLUS!** A further pack of programs for home use that are that bit more professional. The 4 disk pack includes FastBase the brilliant new database and reporting package, STWriter Elite the word processor, SpellSt the spell checker, ClipIt the desktop publishing package, STSheet the spread sheet and Inventory Pro the complete inventory and stock control package. £10.00!

MP19 - **HARD DISK USERS PACK** A special 4 disk pack full of hard disk utilities including 8 HD to floppy backup and lots of HD utilities. 4 disks £10.

MP1 - **NEW STERS PACK** The pack includes STWriter Elite the brilliant word processor, Firstbase and Datahandler the 2 databases plus the loads of utils a

special 3 disk pack only £8.50!
ETP - **Easy Text Plus** DIP V1.4a full page make up with fonts, graphics and high quality output to 9 and 24 pin and lasers full control over text flow, full graphics tools fully illustrated manual. ZZsoft. £20.
IMP - **IMPrint** allows you to take a screen or picture file and print part or all of it. Add text and frames and other graphics. Output B/W or colour 9 & 24 pin printers. Complete with full manual. ZZsoft. £16, colour, £11 black & white.

ISG - **Invoice Statement Generator** by Bay Computers. Raise invoices, produce monthly reports, set up accounts, raise credit notes, print statements, keep a check on debtors etc very powerful tool for small business. £30.

PERP - **Pools Expert Results Predictor** v3.02 by Bay Computers. Excellent pools predictor with a new look and many new features when you receive your copy it will be totally up to date with years of football scores! £15.00.

PD+ - **Personal Database +** by Bay Computers, an excellent address database system, fully configurable, features label printing, Text Processor, mail merge, attach notes to each file and much more, lightning fast in operation. £20.00.

A245 - **Sales Controller** V1.11 a complete system for handling Stocks, invoicing and Suppliers.

A222/223 - **Spell ST** V3.2 the Spell Checker 60,000 dictionary. 1MB £6.

A224 - **ClipIt** V1.2 the page designer.

A215 - **FastBase** V1.1 the latest and best ever shareware database and reporting system for the ST/STE.

A49 - **ST-SHEET** - a very good spreadsheet small but powerful.

W1 - **Type It!** by Charles Edwards, the brilliant type type tool.

BP1 - **EBS** can handle all aspects of your personal finance. £4.00.

A96 - **Sheet** V2.0, large and powerful all features spreadsheet.

W2 - **STWriter Elite** V4.2 the only true PD word processor for the ST/STE.

MP21 - **TeX** the document processor, typesetting system. £20.

A232 - **Cal** V4.5 calendar alerts you of given dates.

A220 - **Chameleon** V1.19 un/load. ACCs as you need them.

MP20/23 - **Video Master** design video scrolling text for titling with effect sets. Includes a printed manual! £8.00.

A239 - **Master Duplication** all the disk copiers in our catalogue.

A271 - **ARCHIVER DISK 1** LHARC V2.0, MINILHARC, STZIP V1.1, UNZIP 4.1, UNLZH V1.72.

A278 - **ARCHIVER DISK 2** ARC V5.21d, ARCSHELL V3.0 by LGF Software, ARCSH V4.1, ZOO V2.1, ZOOSHLL V0.6.

A276 - **SUPERBOOT** V7.2 is an "all-in-one" type program that does just about everything you could ever want to do each time you boot our computer.

STW 41 - **Fselect** v3/1989 the excellent alternative file selector.

A111 - **Headstart** v1.1 auto-boot any program from your AUTO folder.

A128 - **Recover** copies specified sectors to a named file.

A163 - **Gemini** desktop replacement similar to NEODesk.

A236 - **KaasDesk** V2.00 desktop replacement similar to NEODesk.

A231 - **GogoST** V3.2 is a replacement for the file selection windows on desktop.

A41 - **Monochrome Emulator** v5 run most mono only progs in colour.

A167 - **Big Colour Emulator** run most colour only programs on mono monitor.

BP8 - **Music Cassette Label Printer** produce accurate cassette labels. £4.00.

A171 - **Recoverable** Trashcan allows you to retrieve files deleted.

A181 - **InterPrint2** the printer controller. PRINTPLUS v1.1 prints 1st Word documents.

A191 - **Maxi RAM** disk upto 4MB RAM.

A204/205 - **HP Deskjet** utility disks lots of printer drivers and utilities. £6.00.

A207 - **Grabber** this program allows you to store any 4 programs in RAM and execute them from within other programs.

A211 - **Boot Drive Select**. BSSS stores bootsector in the event of a virus infection. Custom Formator create disk of almost any format. DiskCat database system for your disk collection. Revenge Document

Displayer V2.0 the best. SCAN4PIC

rip out pictures from programs.
A214 - **Puncher** V2.0 print out knitting machine punch cards from picture!
UVK - **ULTIMATE VIRUS KILLER** recognises 50 Boot Sector and Link viruses can search, destroy and immunise disks. The most comprehensive virus killer on the ST! £10.00.

A218 - **Sagrotan** V4.17 a very reliable virus detector and destroyer.

A195 - **VKiller** V3.84 anti virus util.

A275 - **FLOW CHART COMPILER** V1.0 a programming language for producing flow charts.

A273 - **ENGLISH to GERMAN** translator V1.9 15,000 words known.

A260 - **ELECTRO** V2.2 a mono complete electronics CAD package.

A237/238 - **Amateur RADIO** Packet Ethern V3.3a, World MailBox, YARP

V2.0 Aurora plot, Morse and more. £6.00.

A44 - **Star Net** Bulletin Board System the best PD BBS system.

A48 - **UniTerm** V2.0c 014 The terminal comms program for the ST.

A165 - **Vinterm** V3.71 excellent all features communications program.

A119 - **Flying Start** v1.04 1200/75 comms program for Prestel.

GAMES

Note: Unless stated all games require a colour screen (TV or monitor).

GP51 - **ARCADE CLASSICS 1**. An amazing pack full of nostalgic arcade games including: Space Invaders, PacMan, Galaxians, Boulder Dash and Definator. 4 disks £12.00.

GP59 - **ARCADE CLASSICS 2**. Mr Dig, Helicopter, Bounty Hunter and Missile Command. Four disk pack £12.00.

GP54 - **ARCADE PACK 3**. Explore different worlds in these brilliant platform games: Parabulum, Gold Rush, Dr Boris, Zephrod, Puzzler, Birt Squid £12.

GP55 - **BOARD & CARD GAMES**. A mega compilation of classic board and card games includes Othello, Safe As Houses, Fire Game, September, Triple Yatze, Draw Poker, Cribbage, Monopoly and Patience. 4 disk pack only £12.00.

GP56 - **ADVENTURE GAMES**. Four excellent new adventures to take you into different worlds. Includes Don't Bank on It, Awe Chasm, Mystic Well, Ditch Day, Drifter, Hack, Larn, Star Trek, Colossal and Darkness Forever. 4 disks only £12.00.

GP58 - **MONOCHROME GAMES 1**. For owners of an Atari monochrome monitor an excellent variety of games which include 17 games A special 4 disk pack for only £12.00.

GP510 - **MONOCHROME GAMES 2**. For owners of an Atari monochrome monitor an excellent variety of games which include 12 more new games A 4 disk pack for only £12.00.

Q73 - **Revenge Mutant** Camel by Jeff Minter another blast 'em to pieces.

Q42REG - 1MB. **International Cricket II** play cricket with full graphics of the batman etc. Excellent only £10.00.

Q155 - **PLUMB CRAZY** a pipe mania cap where you have to construct a pipe line before the fluid is released.

Q88 - **Boxing Champ** train preparation for the big fight. Then it's you against the computer for the big punch up.

Q92 - 68000 **Fruit Machine** a brilliant Fruit Machine game.

Q60 - **Infiltration** by Robin Ball. A brilliant 3D full graphic game.

Q147 - **Penguin** a Lemmings type game.

Q34 - **Puzzle Creators** - Create crosswords, spiral and Multiple Choice word puzzles.

Q26 - **Llamatron** a mega blast 'em up.

Q28 - **Mystic Well** graphics adventure.

Q50 - **Spectral Sorcery** an excellent game featuring wizards etc.

Q33 - **Monopoly** V2.0.

Q66 - **Tennis** excellent full graphics.

Q97 - 1MB. **The Star Trek** game. An excellent full graphics game with awesome sampled sounds.

Q103 - **Pop Eyed** a 60's music trivia strip quiz, tastefully done.

Q107 - **Patience** by Eric Chapman an excellent card playing game.

Q108 - **First Serve** a tennis game.

Q17 - **Flight Simulator**.

Q131 - 1MB. **Anagrams**, you enter a word to see all the anagrams.

BUDGIE GAMES

NOTE: ALL B code games disks are Budgie licenseware, these disks cost £3.00 each there can be no discount for multiple buys.

B1 - **Damonoid** 20 planets, no less, have to be protected.

B4 - **Orhelo** Reversi type board.

B5 - **Pro Darts** 501 down.

B7 - **Ball Zone** an Arkonoid type.

B8 - **Speculator** simulation based on real futures markets.

B10 - **MoneySpinner** The slot machine!

B14 - **Goldrush** A platform pursuit.

B15 - **Perils** of Penfold an adventure.

B16 - **Word** Puzzle Generator.

B17 - **Make a Break** trivia quiz with very strong snooker connotations!

B21 - **Impulse** a totally original concept!

B22 - **Bandit** Electronic slot machine.

B24 - **Slippery Sid** has to munch his way through large quantities of pills.

B26 - **Carrier Attack** the drama and excitement of Battleships.

B27 - **Psicotic** A space shoot 'em up.

B30 - **A Quest** for Galaxia - Galaxians.

B31 - **Inferno** platform set in hell.

B32 - **Runaway Guide** a drone ship through the tunnels of the moon.

B34 - **Safe as Houses** - monopoly.

B36 - **Dogfight** aerial manoeuvres.

B37 - **MR Dig** classic arcade.

B39 - **Onyx** an excellent shoot 'em up.

B40 - **Dizzy Lizzy** Across between Pacman and Boulderdash.

B41 - **Exodus** Awesome shoot 'em up with fantastic graphics!

B50 - **Space Invaders**.

B54 - **AUTOKAMA** Drive an automobile around a maze.

B58 - **Bert the Squirt** An 80-level game designed to help Bert get fatter.

B59 - **Q-ORB** explore galactic cells.

B61 - **A Winter's Tale** 40 levels.

B62 - **Colony** An excellent scrolling "missile command" variant.

B64 - **Castle Frankenstein** create a Monster platform game.

B65 - **Douglas II** Boulder Dash.

B66 - **Missile Alert!**

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B70 - **Pacman ST** The definitive version.

B72 - **Avena Blue** A horizontal scroller.

B77 - **Denis and Denise** platform.

B79 - **Sharks** a hangman style game where here you get eaten by sharks!

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B99 - **BOMB DISPOSAL** place 20 diodes in the correct sequence.

B100 - **CLOD HOPPER** a copy of the old 8-bit classic called Bounty Hunter.

GRAPHICS

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QR45REG - **Art Wizard** an excellent art package which is very sophisticated. It features include animate, fonts, printer and all the normal tools. £8.00.

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QR42 - 1MB. **HPM Draw** V0.93 mono only object oriented drawing.

QR43 - 1MB. **Butterfly Artist** V1.0 mono only supports Degas & IMG.

QR36 - **Colour Space** by Jeff Minters.

QR6 - **DEGAS** Support disk - 155 fills, 10 brushes, 7 fonts and printer drivers.

GR11 - **PICTURE CONVERTORS 1**: Tiny, Degas and NEO.

GR17 - **PICTURE CONVERTORS 2**: PrintMaster, Degas, NEO, Tiny, IFF, SPEC512, AIM, IMG.

GR20 - **PICTURE CONVERTORS 3**: Degas, Tiny, NEO, MACPaint to IMG.

GR34 - **PICTURE CONVERTORS 4**: NEO, Degas, Spec512, AIM, GIF.

GR19 - **FRACIAL ZOOM** V3.1 the most comprehensive fractal program.

QR21 - **ANI ST** animation package.

PROGRAMMING LANGUAGES

L18-20 - **Ghostscript** V2.11 postscript language interpreter. £9.00.

L21 - **Xlisp** V2.1 by Dave Betz.

L22 - **Standard Lisp** V2.07.

L1 - 68K Assembler, Slogo.

L13-L14 - **MODULA-2** DEVELOPMENT SYSTEM V1.0 from ANSI-systems. £6.00.

L15A-L15B - **SOZOBON C** V2. £6.

L3-17 - 2 Adventure writers. £6.00.

MUSIC

M15 - **THE ACCOMPANIST** V2.4 a 16 Voice MIDI Sequencer. A fully working MIDI sequencer by Henry Cosh.

M21 - **NoizTracker** V1.2 the full program and modules.

M22-23 - **Quartet** Samples £6.00.

M28 - **NOTISTE** **Music Manuscript** V1.0 MONO ONLY desktop publishing for Musical Notation and Musical Scores.

M29 - **DIGI COMPOSER** by Il Professore and Bilmaster of ISTARI. An extended version of Noise Tracker.

MIDI40 - **Waddington** 32 track MIDSequencer.

STE DEMOS

These demo disks will only work on an STE with a colour screen. **Special Offer!** Save 10% Buy all 15 of the following STE demos for only £33.75! Order code for all 15 STE demos is STE15.

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Weird Sines and Automation Bananfsk.

D298 - **Winter** In July 3D Stereo.

D303 - 1MB. Astro stereo sound.

D144 - The Official Atari France STE!

D214 - Sound OFF.

D228 - 1MB. AN COOL.

D229 - 1MB. The Jungle demol!

D230 - MovieSTE.

D231 - 1MB. BOING STE.

D232 - 1MB. NOTISTE 62. Fantasia.

D233 - 1MB. 3D Scroller.

D234 - 1MB. Psychedelic House II.

D251 - The Black Cat.

D252 - The 2nd French!



GFA Basic programmers' surgery

Barrie Capel answers more of your GFA Basic queries

CHANGING RESOLUTIONS

R Williams in Batley wants to know how to change the ST's resolution with GFA Basic.

Well, if you read the available books, the general consensus is that it can't be done satisfactorily, even if `XBIOS(5)` is capable of doing it. This is because GEM initialises itself on boot-up to be in either one resolution or another.

A good example of the problems incurred is with the mouse. If you load GFA Basic in low-res 320x200 pixel mode, GEM knows that the maximum X and Y mouse coordinate values cannot be greater than 319 and 199.

If you then shunt the ST into medium resolution, GEM won't let the mouse past the centre of the screen because medium-res is 640 pixels wide and GEM still thinks the screen is in low-res 320 pixels wide mode. Other GEM functions work on a similar basis too.

(This incidentally is why GFA Basic v2, when run in low res, won't allow the mouse pointer past the centre of the screen when it switches to medium resolution for the editor – you have to use the function keys with or without the <Shift> key).

However, if you load GFA in medium resolution there's nothing stopping you from changing down to low res and restricting the mouse horizontally to 320 pixels. A low-res picture could be displayed before you switch back to medium res for displaying text if that's what you want...

To do the switching, you use `XBIOS(5)`, which uses the following syntax. (The `↓` symbol means do not enter a <Return> yet.)

```
VOID XBIOS(5,L:logical_screen%,↓
      L:physical_screen%,rez%)
```

where `rez%` equals 0 for low res, 1 for medium res and 2 for high res. The variables `logical-`

`_screen%` and `physical_screen%` should be both set to -1, which indicates "no change."

A file called `SWITCH.GFA` – an example of loading a low res Degas picture into GFA Basic running in medium res – can be found on this month's Cover Disk – see page 6. All you need to do is supply your own low res Degas P11 picture to load in.

AN AID TO GFA MENU PROGRAMMING

Reader Mark Matts from Leicester has written a handy little program called GFA MenuMaker. After reading in STF about readers' problems creating Menus, he decided that there were enough confused GFA programmers out there to dig out and tidy up a program he had written some months earlier for his own use. It's Public Domain, and it enables you to enter the menu headings, the drop-down entries, and the procedures that they call. The program then creates the required menu GFA code and saves it as a .GFA file which can be merged into your program. When it's merged, you enter your own program lines into each created empty procedure. You'll find GFA MenuMaker on this issue's Cover Disk.

READING THE KEYS YET AGAIN

Normally, to read keys you use `INPUT`, and if you don't want your program to stop while you read a single key you use `INKEY$`.

Either way, your program usually acts on the result of testing the resulting input's ASCII code with:

```
I$=INKEY$
PRINT ASC(I$)
```

Assuming that `INKEY$` is used, you press the "a" key and 97 is returned. Press <Shift>-a and 65 is the result. Great – until you press <Help>, <Undo>, any keys with <Control> or the Function keys, in which case a very unhelpful 0 is returned in each case. James Horsfall in Huddersfield wants

to know how to solve this problem.

This is another one of those problems that can be cured in a number of ways. When you use `I$=INKEY$` and get the ASCII code, `ASC()` only returns the ASCII code of the first character of the string tested.

For example, if `I$="Another fine mess"`, then `ASC(I$)` returns 65 just the same as if `I$="Aardvark"`! The root of the problem is that you should not assume that `INKEY$` returns a single character string – even if you press a single key!

Take a look at the listing `KEYS.GFA` on this issue's Cover Disk. As you can see, sometimes `I$` is two characters long – check it with `LEN(I$)`. If it is, the first one always has an ASCII code of 0, in which case you simply use `ASC(RIGHT$(I$,1))` to get the ASCII code to act on.

PROGRAMMING RSC FILES

Barry Munro in Leven wants to know if there is a book which covers programming with RSC files and GFA Basic.

The one you want is GFA BASIC: Advanced Programming from GFA Data Media UK Ltd, which covers a number of subjects in GFA Basic v2, not least the subject of RSC files. It contains many example listings which are also available on an optional disk. Written by Frank Ostrowski, the author of GFA Basic, it's a must for all v2 programmers. Ring GFA Data Media on 0734 794941 for the current prices.

CAPS LOCK LOCKING

Wayne Bradley in West Bridford wants to know how to read the Caps Lock key in GFA programs and also detect if a connected printer is not ready.

To turn the Caps Lock on, use:

```
VOID BIOS(11,BIOS(11,-1) OR &H10)
and to turn it off, use:
```

```
VOID BIOS(11,BIOS(11,-1) AND &HEF)
```

For the printer detect, use `a%=GEMDOS(17)`. If `a%=0` then the printer is not ready.



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receive (once, anyway). Just write your problem on this form and mail it to us at the address below – free!

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Address

My query/tip has to do with: (Please tick the box that applies)

Beginners ☐ Comms ☐ Disks ☐ Graphics ☐
 Hard drives ☐ Printers ☐ Sound/MIDI ☐ ST problems ☐
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MEMORY UPGRADES

HCS STE and MEGA STE UPGRADES

HCS STE memory upgrade kits come complete with full instructions designed for the novice. The complete job should take no longer than 15 minutes. 2 and 4 megabyte kits come with free utilities disk and multitasking software.

Upgrade from 520 to 1040£18.00
To 2 Megabytes£60.00
To 4 Megabytes£115.00

STF (M) and Mega ST upgrade kits

Xtraram Deluxe plug in upgrading system fits inside the computer. It can upgrade your computer in stages to 1Mb, 2.5Mb* and 4Mb. The kit comes with comprehensive instructions designed for novices. The kit uses SIMMS, so is easily upgradeable.

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To 2.5 Megabytes.....£90.00
To 4 Megabytes.....£140.00

Solder in Kit

The solder in kit will upgrade the 520ST to 1Mb. Electronics experience is required as much soldering is needed. Check your RAM chip configuration before ordering: 4 or 16 chips, SMD or DIL.

Solder in kit (all versions)£25.00

REPLACEMENTS

The HCS power supply and disk drive upgrades come complete with fitting instructions and plug straight into the ST without soldering. The Power supply produces less heat than the original so is more reliable.

Replacement power supply£39.95
Double sided disk drive kit£47.00

ACCELERATORS

The AD speed made by ICD fits in place of your microprocessor. It uses a 68000 chip running at a switch able 16Mhz with cache or standard 8Mhz to give virtually 100% compatibility. The 68030 SST for the Mega ST gives phenomenal speed with a 68030 running at 50Mhz! The SST has space for 8Mb on board RAM, TOS2 included.

AD Speed ST£145.00
AD Speed STE.....£165.00
68030 SST - 50.....£550.00
Fitting for above£35.00

INTERFACES

The "AdSCSI" ICD host adapter gives SCSI output from the STs DMA port, complete with full documentation, DMA cable and hard drive formatting software. Keyboard interface allows the use of external PC compatible keyboards on the ST. Multirez allows the ST to display all 3 ST resolutions on the multisync monitor. The forget me clock sets your STs time and date, with cartridge-through port.

AD SCSI.....£69.99
AD SCSI Plus (with clock)£79.99
Keyboard Interface£55.00
Multirez£44.99
Forget Me Clock.....£16.99

MONITORS

14" super high resolution 0.28 dot pitch Multisync monitor is compatible with the TT, PC VGA/SVGA and Multirez. SM144 is compatible with all monochrome ST software, all normal controls at the front. Both have picture size and position adjustment.

Multisync colour monitor£280.00
SM144 14" FST Monochrome£115.00

MODEM 9600

HCS modem 9600 has FAX capability with super fast 2400 baud MNP 5 error correction and compression, with autodial for all computer formats. .

Modem 9600 MNP level 2, 3, 4, 5£139.99

PC EMULATORS

PC emulators fit onto the microprocessor in the ST. The computer can then be switched between PC and ST mode. For fitting on the STE or Mega please contact technician by phone.

AT Speed C16£205.00
AT Speed 8£135.00
PC Speed.....£90.00
Fitting for above£30.00

The Vortex 386 emulator runs at 16Mhz and allows true multitasking in PC mode on the ST. Space on board is provided for a 387 CO Processor and 512K of FASTRAM. Norton factor 15!

VORTEX 386 SX-16£330.00
387 CO-PROCESSOR£117.00
FASTRAM CACHE£30.00

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The Spectre GCR cartridge allows the ST to emulate the Mac giving 20% more speed than the Mac plus with 30% bigger screen area! It is fully compatible with ST hard drives. When used in conjunction with the SST it can beat the fastest macs. The megatalk board fits the Mega ST to allow connection to Mac specific peripherals, LAN network and Mac SCSI.

SPECTRE GCR (Inc. 128K Roms).....£300.00
Megatalk Board.....£250.00

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June 1992
Two Disks: *GFA Basic v3.5*, *GFA Assembler*, *GFA Raytrace* complete; *Pacific Islands* demo, complete database and astrology programs, and much more
Inside: upgrades step-by-step; ST astrology; program fractals

ISSUE 34

May 1992
Two Disks: *GFA Draft Plus 3* complete 2D vector drawing package; *Campaign* demo; *Intro Designer*; six more full programs
Inside: 21 pages of art guides; ST Book portable tested; weird games; 120 tips; Buyer's Guide

ISSUE 33

April 1992
Two Disks: *Write On* complete package; *Leander* preview; two raytracing programs; complete *Penguin* game; fractals and more!
Inside: Over 20 pages of tips; complete guide to raytracing; get the best from *Sequencer One*

ISSUE 32

March 1992
Disk: *Nightmare* demo; *Kozmic* pattern generator – exclusive; *STOS* extension and more!
Inside: Find out how you can make money with your ST; reviews of *STOS 3D* and *Timeworks 2*; over 40 ST tips!

ISSUE 31

February 1992
Disk: *Stereo Master* preview; *Revenge of the Mutant Camels* – complete; ten utilities
Inside: All you need to know to get started with the ST; roundups of top software, games and add-ons; inside your STE

ISSUE 30

January 1992
Two Disks: complete *Sound & Vision* packages, plus "Get Started" supplement; *Populous 2* & *Baby Jo* demos; & much more
Inside: Being creative on your ST – DTP, programming, graphics and music; high res games

BACK ISSUES

Still in stock: STF 3 (violent games), **9** (scanners), **11** (piracy, comms), **12** (music), **13** (tips), **14** (the cost of games), **15** (*DPaint*), **16** (get active), **17** (50 games reviewed, hard drives, printers), **18** (*Interphase* complete), **19** (getting started), **20** (31 programs on Disk, complete plug-ins guide), **21** (animation special), **22** (DTP, WP, recover lost data), **23** (3D, comms)

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ISSUE 29

December 1991
Disk: Autoplay intro sequence creator, Daylight Robbery and Stereo Replay demos
Inside: Making your own intros, score-writing packages, ST-related book roundup, Band in a Box reviewed and rated

ISSUE 28

November 1991
Disk: Three fractal programs: Mic-29M Super-Fractal, Home Accounts 2 demo
Inside: All you need to know about fractals on your ST, 25 "serious" packages reviewed, floppy drive roundup

ISSUE 27

October 1991
Disk: Rolling Romy demo, ST Writer Elite v4, spiral pattern generator, six utilities
Inside: Professionals' graphics techniques, hard drive roundup Plus 250 best buys in our 24 page buyers' guide supplement

ISSUE 26

September 1991
Disk: Ultimate Virus Killer, Magic Pockets demo, TOS 1.4 fixes and a swag of utilities
Inside: Protecting your ST from viruses, how STs are being used to produce TV ads and business cards, Calligrapher reviewed

ISSUE 25

August 1991
Disk: Mega to mania demo, Flexidump printing program, a diary utility and more
Inside: 20 printers scrutinised, memory upgrades guide, emulators roundup, Soul II Soul interview, PD library interview

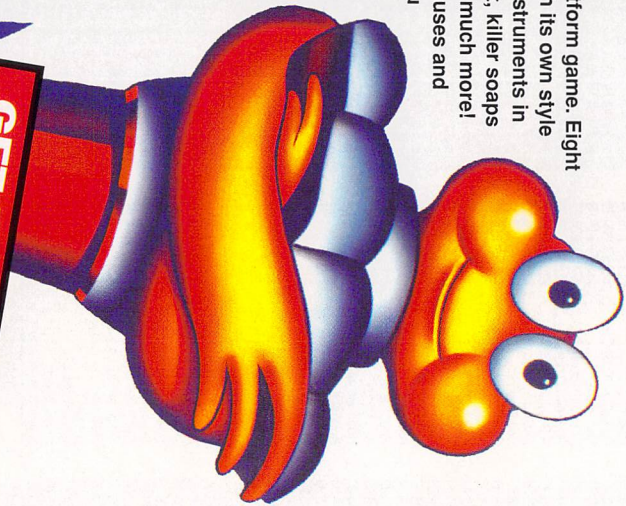
ISSUE 24

July 1991
Disk: Atomino demo, Lematron complete game, a better file-selector and more
Inside: Complete ST video guide, digitisers roundup, exclusive details of Atari's two new portable "STs", 85 tips

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**ED RICKETTS**

Ed likes to think that someday the true meaning of his writing will be revealed. Until then he can continue living in this country.

**PAULA RICHARDS**

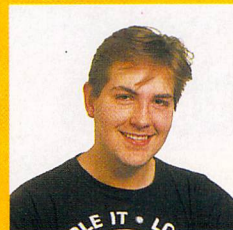
Gorgeous pouting Paula says she's often mistaken for someone famous. Winston Churchill, actually, but she doesn't generally mention that bit.

**ADRIAN PRICE**

Adrian claims his new Direct Memory Access Aural-Visual Typing Aid will revolutionise the secretary's lot. Sad, isn't it?

**CHRIS LLOYD**

Not at all gorgeous or pouting Chris would just like to thank Radio One and Harry Enfield for supplying him with his material.

**JAMES LEACH**

Collects unusual compartments. So far he's got two: a pocket off Doctor Who's coat and a box with three sides. Any donations gratefully etc.

**RICHARD BRADSHAW**

An adept. At what, he's not quite sure, but he thinks it's something to do with swimming without the aid of those pink inflatable things you put on your arms.

SCREENPLAY

GET THE DROP ON **ROBOCOP 3**
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MASTER POPULOUS 2 ● 16
TOP GAMES BUSTED – PAGE 86

As a cheap and pointless gimmick, this month's Screenplay Intro wibble was written in reverse. Unfortunately a massive technical error means it's been printed in reverse. (Bit this except.) And now, some games



LEGEND

Legends tell of a huge and mysterious machine somewhere in the land of Mammon that churns out RPGs day and night. Other legends tell of a race of people who spend their days playing these games. *Legend* is RPG Serial No. 2214487892.

page 70



POTSWORTH & CO

Who? Apparently five million people watch Potsworth on the telly. Have you ever heard of him? You can't miss him – he's a lovable rogue of a cartoon dog, not unlike Scooby "If it weren't for you durn kids we'd have gotten away with it" Doo.

page 72



FORMULA ONE GRAND PRIX

Oh yeah, sure, like it's finished at last. Like Geoff Crammond has finally added the last few bytes. Like it's really here, in packaging, with all the bits. Oh – it is? Well stick it over there with *Midwinter 2*.

page 74



GOBLIINS

"So what shall we call this game about these three goblins who have to find bits of a magic potion in order to cure their sick king, then, Jean-Claude?" "Well... how about *Gobliins*?" "Makes you sound like you've got a stutter." "Oh, merde."

page 69



LAST NINJA 3

No, this really, really is the last Last Ninja game. Next comes the First Ninja series, set in a time where ninjery was the norm and brutality the business. Then the Fairly Widespread Ninja trio, and...

page 78



A320 AIRBUS

"Charlie Romeo Alpha Sierra Hotel, we're coming in to land. Are we cleared?" "Who cares? Just aim for a vacant spot and hope for the best. That's what you usually do, isn't it?" (Seriously Tango Alpha Charlie Kilo Yankee stuff.)

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LIGHTLY CRISPED THIS MONTH

and then left to get cold on the plate

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● It is *ST FORMAT* policy to review only finished games – that is, the games you could actually buy in the shops – never incomplete or demo versions.

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GOBLIINS

Gobliins? What the hell? Massive cock-up at the printing factory? Dyslexic programmer? No, it's French. *Gobliins* features three goblins, hence the three "i"s. (Uh, right.) The king goblin in Goblin Land has come over all sick and can't be cured by anyone. It's up to the three goblins to find Niak the wizard and get him to brew up a cure.

What this entails is the traversing of 22 separate screens, the goal of each being to move to the next. Each screen covers a specific location – for instance, the first is outside the wizard's house. The next screen can only be reached by using the objects present to remove obstacles or kill monsters. On the way, you have to collect

the four ingredients for the cure. Each goblin has a different ability. Asgard the Warrior is the strong-arm of the team. He's great at punching – doors, rocks, buttons, anything. He's also the goblin to see if you want anything climbed – ropes, rock walls and ladders present no problem to him. Ignatius the Magician casts spells, so no change there – what the spells actually do depends on the object they're cast upon and where it is, though generally the object is transformed into something else. Oups the Technician can pick up, drop and use objects. You can't specify how to use an object – like the Magician's spells, the effect depends on the object and location. For example, you might have to use Ignatius to transform a



● Your hosts are Asgard, Oups and Ignatius, and they're taking you on a journey of mystery (coo), imagination (ah) and humour (ha). Because they are... the Gobliins!

stick into a flute, then get Oups to play the flute next to a coiled snake. The snake then stretches out into a climbable pole, so Asgard can climb up it and get to previously unreachable areas. As you complete each screen, you're given an access code for it.

A bar at the bottom of the screen displays the group's energy. This decreases if you perform a wrong action or damage a goblin in any way. Goblins are easily scared, so even looking at something nasty can decrease their energy. As you progress, the bar gets so low that making one simple mistake can mean Game Over.

The puzzles are of the "Of course! It's so obvious when you know what to do" variety – that is, hard. You can't even be sure that you need to use every object on-screen – some are total red herrings. Experimentation is the order of the day – all the screens are solvable, but that doesn't make them any less frustrating.

VERDICT: If game plots were houses, Conceptville would be a Milton Keynes of semis, lined up row upon row. But *Gobliins* would be the strange house on the hill, a quaint, eccentric and endearing mansion.

Enough laboured metaphors. The point is that *Gobliins* is a massively fun game and strikingly original to boot. Why hasn't anyone else come up with the idea of a series of static puzzle screens? And before you think it, *Gobliins* is nowt at all like *Lemmings*.

What really carries the game is the quality of the graphics. From the screamingly funny intro to the expression on each goblin's face, they're faultless. Though small, the goblins have a huge range of animation: when they're scared, their eyes pop, their mouths elongate hugely (accompanied by an

sampled scream), and they turn rigid. When you do something right, they all turn somersaults and grin broadly. Do something wrong, and you're greeted by three angry faces and much tapping of foreheads. Even while they're waiting for you, they tap their feet, juggle (badly), yawn and stretch out their arms with a blank look on their faces. Not only that, every sound effect is sampled, and wouldn't be out of place in a Tex Avery cartoon. The only thing that lets the game down is the lack of longevity. Vicious brutes of puzzles though they are, the 22 screens can't possibly keep you going for two or three months, the period of enjoyment you might reasonably expect to get from a good game. Unless, as is all too possible, you become stuck on one particular screen. You've tried everything, nothing works, and you hate the damn game... but you're still determined to beat it. And when you do, the feeling of smug satisfaction that envelopes you is worth all the agony.

Charming, idiosyncratic and oozing with quality, and that's just the graphics. Forgo a couple of CDs this month and get *Gobliins* instead. It is, as they say, the dog's – er, knees.

ED RICKETTS

GOBLIIN IIINGENUITY

Once you've acquired a diamond and entered the Wizard's house, you have to work out how to give it to him. It's like this...



1 Oups gets the jar from the table on the left. Use it and you find there's a fly inside.



2 Go to the right hand plant, use the jar and out pops the fly. The plant grabs and eats the fly. Repeat.



3 Next the magician needs to cast a spell on the left hand plant. This makes it grow...



4 ...so Asgard can climb up it onto the table, walk over to the book on the right and give it a bash.



5 This pushes it off, so Oups can climb up it onto the table, toddle over to the Wizard and give him the diamond. Easy, right? So why the fly? Just try walking past the plant without feeding it first.



GOBLIINS

DREAM FACTORY
£25.99

- Tremendously funny graphics and great samples. If the French can do them so well, why can't everyone else?
- Single-screen puzzle format is a belter of an idea and brilliantly executed.
- The closest comparison point is *Lemmings*, but *Gobliins* is really in a world of its own.

STF RATING 87 %

LEGEND

Oh, wonderful, another RPG. More goblins, leather goods and Swords of Perdition. Seen one, seen 'em all? Well, yes, but have a look at this one anyway. Go on, just a quick peek. You'd make Ed Ricketts' day...

It is a time of dread, a time of woe. But then that's not surprising considering what's happening in the land of Trazere: innocent citizens being ruthlessly transformed into horrible monster things all over the shop by some nameless evil that desires to take Trazere by the throat.

But look, never fear, here comes a band of brave adventurers. These stout fellows have the ability to save the land from all evil. There's the Berserker – the muscle-strewn but sadly intellect-free warrior with the strength of ten, the Troubadour – the golden-throated warbler of stirring but undeniably annoying ditties, the Assassin – a hider in shadows and stealthier than a stealthy thing, and the Runemaster – a learned old wizard with a big spellbook and capacious cloakery.

The task facing this bunch of assorted clichés is to enter the dungeons beneath Trazere and find... um... something. Not quite sure what. You're also not quite sure what to do when you've found it. It's all very mysterious,

but the point is to destroy the evil that's blighting the land.

The game's split into two sections. It begins above ground with a map of Trazere. Your group is free to travel over the land, visiting various places of interest – such as keeps, apothecaries and, of course, taverns. Use these locations to prepare for the dungeon, buy weapons and spells, get hints from the tavern keepers, and buy songs from the Minstrel, if you can find him. (These songs come in handy later on.) Apart from the temples, where you can regenerate knackered characters, the most important locations are the Guilds. These places enable you to train up levels, so when you re-emerge from the dungeon later on with heaps of experience points, you can use the guilds to move up to the next experience level. This makes the characters stronger. Also, dungeons are only accessible through guilds.

Dungeons are where you spend most of your time. Entering one changes the display to an isometric 3D view with



● If, when you're pootling about, you come across a "vanguard of the evil mob," you can either fight or try to hide. Hiding sometimes works, but fighting is usually a pretty bad idea – there are a lot of them and exactly four of you.

your characters in view. Each is controllable by selecting an action – such as Take or Look – and then the object to use it on. There are plenty of lever/button/pressure pad puzzles to solve and an inordinate number of locked doors. The keys are all available somewhere – but not necessarily in the same dungeon.

Every other room you visit tends to contain monsters of some sort. A big fight ensues, and this is where the characters' specialties are called in. Each class has a certain skill that can be called into play in a battle if you want to boost their performance. The Barbarian can go into a Berserker rage and bash hell out of all and sundry, the Assassin can "hide in the shadows" and sneak up on the monsters from behind, the Wizard can, of course, cast spells, and the Troubadour sings. Great. But the songs he sings alters the party's attributes in some way: the Smithy Song, for

instance, temporarily boosts their armour class.

The game box boasts "film quality animation." This is a bit of a fib, as you might have guessed. The character animations are adequate but nothing special, and certainly not as lifelike as in *Prince of Persia*. The scenery graphics are somewhat better – well coloured and with a reassuring solidity. There are one or two intro and interlude screens which are a bit dodgy that tend to spoil the atmosphere slightly, but on the whole, everything's spiffy in the graphics dept. As usual, though, the sound is less than awful: an irritating plinky-plonk tune in normal play and whooshy bits in a fight. Yuck.

VERDICT: You could spend half your life completing *Legend*. The game's really quite repetitive: a great deal of collecting, fighting and backtracking needs to be done. But a sort of haze

● This muscly person is a blacksmith. He can sell you weapons, or, if you like, you can offload your old hardware tat onto him for a tidy profit.



● "I should open the door with the Bronze Key. I found it." "Yes, but I'm the intelligent one who can hide in shadows when there aren't any. What do you think, Barbarian?" "Uh... what was the question again?" A little character trouble in *Legend* never goes amiss.

POINTS TO VIEW

The fair kingdom of Trazere.
Some places you may want to visit at some point:

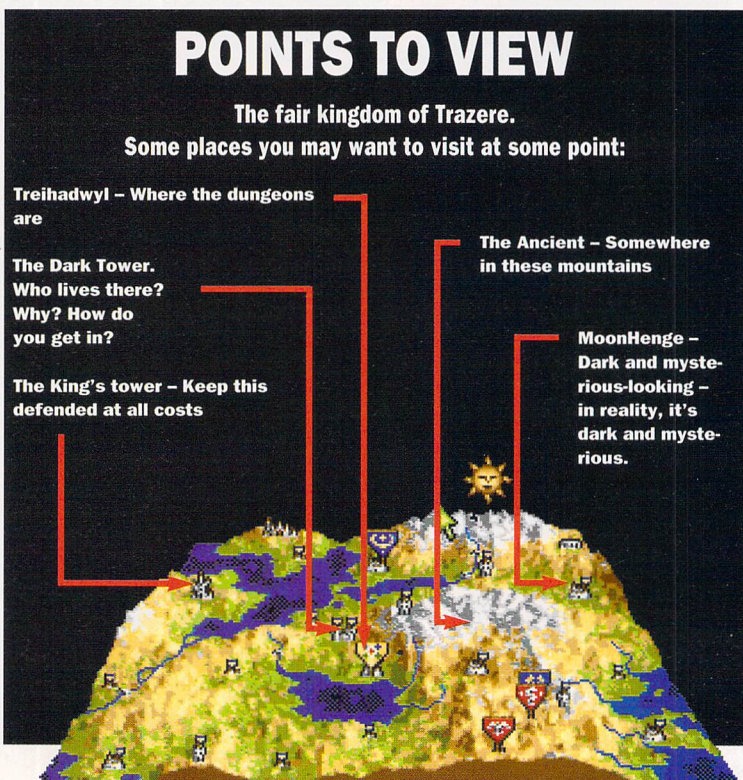
Treihadwyl – Where the dungeons are

The Dark Tower.
Who lives there?
Why? How do you get in?

The King's tower – Keep this defended at all costs

The Ancient – Somewhere in these mountains

MoonHenge – Dark and mysterious-looking – in reality, it's dark and mysterious.





● The adventurers arrive at the tavern. “Sorry, sir, we don’t serve wimmen. Or wizards. Or people who aren’t wearing shirts. What can I get you, Mr Assassin?” “I’m looking for the minstrel, stout yeoman.” “Ooh, no, sorry sir, we don’t serve anyone wearing tights and a ridiculous costume.”



● There are two things to bear in mind about the Artificer: 1. Don't try to say his name when you're drunk and, 2. Buy things from him by all means, but remember, they're probably available free somewhere in the dungeons.

descends on you when you're playing – you lose track of time and find yourself becoming really quite obsessed. Anyone who might happen to be looking over your shoulder for an hour or two while you play it is likely to wonder what the fuss is about. Tell them to stop breathing down your neck and go away and play it for themselves – with any luck they'll soon understand.

Tag have obviously encoded some sort of subliminal “enjoyment” message into the game. It shouldn’t be fun and it shouldn’t be absorbing, but it is. It’s not strictly aimed at the manic RPGer who revels in Armour Classes, Level Two Warriors and suchlike, so it’s more accessible to the average gamer. The spell mixing section, rather than being a chore, only adds to the game’s longevity.

Thoroughly recommended. Get it and see why.

ED RICKETTS

LEGEND

MINDSCAPE £30.99

- Separation of the game sections – above ground and in the dungeons – works well, and doesn't seem forced.
- Effects can't compete with the likes of *Knightmare*, but at least you can play this without being annihilated every two minutes.
- Not as complex as *Shadowlands*, but again, it's more fun.
- Good stuff, really.

STF RATING **89** %

DUNGEON MASTERING

And you always thought dungeons had walls



1 Click on Eliot the dragon to see the map he draws for you. It doesn't show what's in the rooms, though, or which exits are temporarily unavailable.

2 Click the bag to see and manipulate the current character's inventory. This bit is almost a clone of Dungeon Master's inventory screen: objects can be shuffled about and passed between characters. Items like swords and spells need to be equipped if you want to use them, but not placed on the right part of the body – that's taken care of automatically. From here you can also see stats.

3 Run away! Run away! Click on the chicken to scarper if you can't handle a fight. The chicken flaps its wings and the characters keep running until you click the Rally icon.



4 The main display. Search everything – even empty tables can hold objects.

5 The currently controlled character is selected from here. The skulls show the hit points each has.

6 Character actions. The one that comes last is that character class' speciality.

7 The objects the character is holding in each hand and so is able to use.

8 Equipped magic items appear here. In order to use them, you have to click on them.

9 Click on Rally to gather the other characters around the selected one. If you're in a fight it makes every character join in.

HOW DO YOU SPELL?

Spells are the Runemaster's thang. A spell is made up of at least two runes, one specifying the spell's direction (Missile, Surround, Continuous or Forward), and one specifying the effect. Common effects are Heal and Damage. In addition, each rune needs one of eight ingredients to make it work.

These ingredients can be found around the dungeons or bought from Apothecaries. When you find

more complex effect runes, you can string “sub-spells” together if you want to make longer and more complex spells with several effects. For instance, it’s possible to make a spell that has the ability to protect the spell-caster, hit a monster and damage it, and then spread out in eight directions and does the same thing, thus creating a powerful chain reaction. Time for a spell frenzy!



1 The scroll displays any spells you've already cooked up. It also enables you to quickly make more of the same concoction without having to remix the ingredients, or trash a spell completely.



2 The eye shows you each rune you've collected, the name of the rune and the ingredient it needs to be included in a spell.



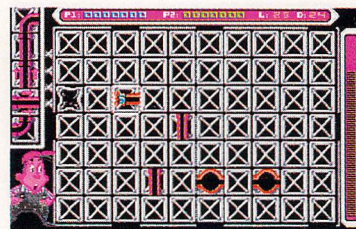
3 The Ingredients you're carrying and the number of each.

4 The runes themselves. The four at the top are direction runes, the others cover the effects. With 12 effects, four directions and the ability to string them all together, you have a

total of - er... (rapidly flicks to preview in issue 30) 2×10^{18} spells. Ooh.

5 Once you've assembled the parts of the spell, clicking on the bowl makes the final thing. Clicking on the bowl beneath throws out all the ingredients so you can start again.

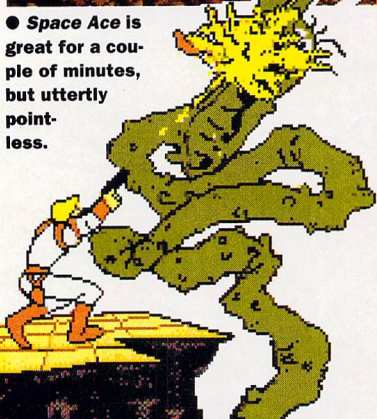
AWARD WINNERS



● There's a secret method to winning *Pipe Mania*, and it's this: lay the pipes so they join up. Honestly, you don't stand a chance if you don't do that.



● *Space Ace* is great for a couple of minutes, but utterly pointless.



Most compilations have a theme, but they're usually tenuous, to say the least. The only thing to connect the games in *Award Winners* is that they've all won awards. Uncanny.

SPACE ACE

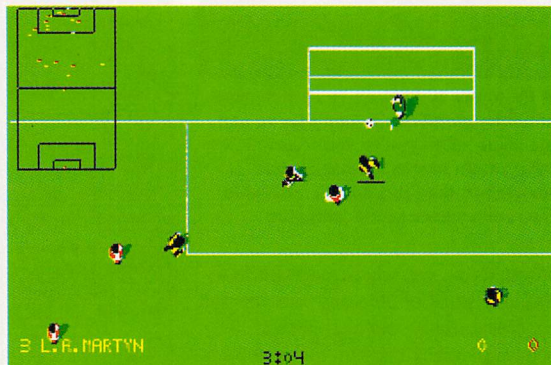
Let's kick off with a dud. *Space Ace* was developed from those useless laser disk games with frighteningly good graphics but oddly absent gameplay. Unfortunately, nothing has been lost in the translation – the game's just

as bad on the ST. It consists of a series of short animated scenes starring the Ace himself as he battles to defeat... and so on. You don't have much control over Acey. Your involvement is limited to a few apposite joystick nudges at the right places – so if Ace is in danger of falling off a ledge, you might have to choose between sending him left or right. One direction is always wrong and sends Ace to a nasty doom.

The game quickly becomes very frustrating: you have a very limited time to choose Ace's movement and it needs to be performed at exactly the right moment. Although the graphics and sound are superlative, one or two joystick movements just aren't enough to keep you interested.

KICK OFF 2

Of all the football games that have been released, *Kick Off 2* is the best. Full stop. It's an overhead-view sim



● Oh wow! Look at that! Fashanu just scored a goal and then immediately demanded a £5,000 raise. But Charly Charles has contested it on the grounds of stupidity. *Kick Off 2*: what an incredibly exciting game!

POTSWORTH AND CO



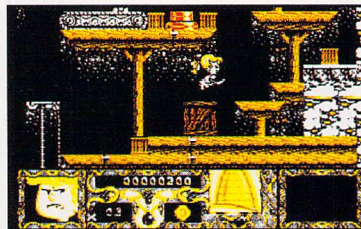
● Not wanting to give the game away, but if that teddy bear wasn't where it is now, Keiko wouldn't be where she is now. *Potsworth and Co*: puzzles, platforms and pretty pictures.

Five million people apparently know and love Potsworth, a dog, regularly following his adventures on the small screen. Where these people are in the world is a mystery, but no matter, through the magic of computer science you can actually join in and direct his and his friends' dreamtime adventures. There's some complicated wibble

about the Dream Zone, the Nightmare Prince and searches for the Potion of Slumber, but it's best if you just ignore that and get on with working your way through the five levels of this platform game. You take the part of different characters – chosen neither on grounds of sex, country of origin nor membership of the human race – as you scroll and work your way around the different backgrounds. While all the levels are set in a variety of places, your tasks remain essentially the same – you have to

explore thoroughly and pick up objects, avoiding enemies and solving puzzles as you go.

The first person you represent is the obnoxious Rosie. She's your token English girlie who went to ballet lessons as a five year old and never quite got out of the habit of pointing her toes delicately when jumping from platform to vicious spike. Rosie's other personal qualities



● In the first level you're underground, but just look at those toes! It seems incredible that Rosie remembers to point them when she must be cold, damp and mouldy from living in that unpleasant cave.

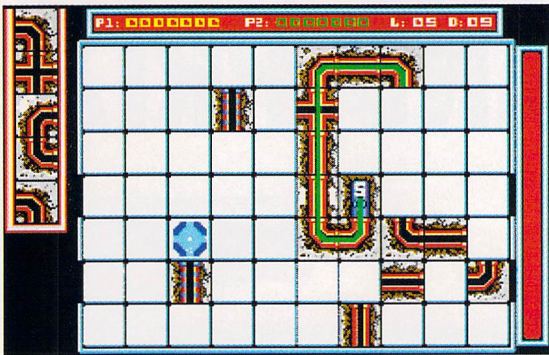
include a great capacity to shout – presumably supposed to be the female equivalent of shooting nasties – she just picks up a handy loudhailer and screams people down. She lives in a cave and is on a quest for the five parts that make up a hi-fi. Unfortunately, Hi-Tec appear to have forgotten that caves are generally cold and damp places, not really suited to the long-term storage of batteries.

In Level Two you're Nick, the "Super Duper Man" – well, that's what the manual says – and



● Nick doesn't always deserve the title "Super Duper Man" and here's a notable example. He obviously hasn't worked out the important connection between not getting a broken jaw and that rather heavy weight.

you have to get to the top of the Suspense state building. You have the ability to carry heavy weights on your shoulders with extreme ease – although the mark "10" could equally mean grammes, rather than tonnes presumably. Using these weights seems to be the key to progress – but don't be fooled, the combination of the weights and vacuum tubes just doesn't work. Going up the tube is fun though – rather like Snakes and Ladders except without the snakes or ladders, but with that level of effort.



● If you laid all the pipes out in a huge circle, wouldn't the flooz just go round and round for ever? (No.)

that you can save your "golden" goals for replay later. Make disks full of them and you can get dewy-eyed reliving your finest moments.

The graphics are small and not wonderfully animated, though they have some good touches: players do handstands when they score a goal and limp off when injured. The pitch scrolls at blistering speeds which may be disorientating, it goes so fast.

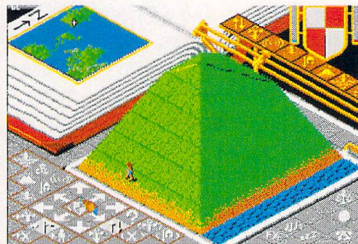
The game possesses a magnificent ability to draw you in and get you totally hooked for at least three months, but only if you keep at it. And saying you don't like football is no use; by the time you've thrashed through four divisions, you will. Most wonderful.

PIPE MANIA

Another groovy puzzler that makes Tetris look like the pale pathetic thing it is. The concept behind it is like this: each screen is divided into a grid.

Somewhere on the grid is a "tap" out of which starts to flow a liquid called flooz. At the side of the screen pieces of pipe appear in a certain sequence – straight sections, corners, curves and junctions. You have to place the pieces on the grid so the flooz flows without hitting a non-pipe section. The thing

is, the pipe bits don't appear in the right order – you have to place them by planning ahead and working out how to put the pipe together. A particular number of these pieces need to be placed on each level before the time limit runs out. This is made more difficult on the later levels because there are certain grid sections that the liquid has to flow



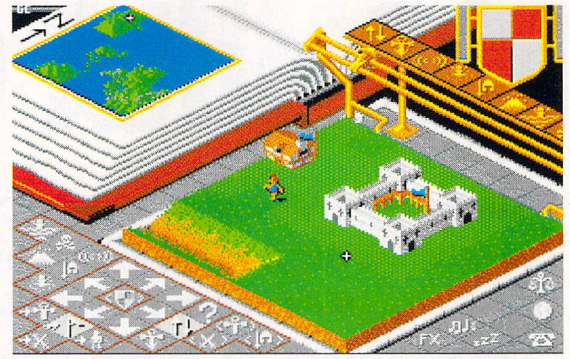
● Each and every one of these people has a name, a pet, a family history and a vicious grudge against the other side. And a telephone number. And their own bank account. And...

through, bonus sections to give you extra points, and other special bits like reservoirs that slow down the flow for a while. The game starts off fairly slowly, once you get the feel of it, but soon gets very frantic indeed. The grids get more difficult, the pieces get more awkward and the times gets shorter. It's an excellent game with a brilliantly simple but involving concept.

POPULOUS

What can you say about *Populous* that hasn't already been said? It's the game that started a genre, the god game. It's a bit complicated to explain here, and anyway the entire population of the world now knows how to play it. Suffice it to say it involves two populations throwing nasty effects at each other in an attempt to become the dominant race. *Populous* never was the zippiest of movers and now it's looking decidedly tortoise-like. The screen update jerks perceptibly when a lot of your men are on screen at once, and some of the effects are a bit cheesy. Still, it's a historic game, and well worth playing.

VERDICT: *Award Winners* really is a good compilation. Three excellent (and



● I'm awfully sorry, but was that your entire population I've just managed to wipe out? My finger must have slipped onto the Volcano icon and then – well, "oops" is all I can say.

classic) games with just one duff is pretty good going; any one of the three keeps you going for ages, and you can at least use a cheat on *Space Ace* and gawp at the pretty graphics. For a bit more than something awful like *Space Gun*, you can have a compilation that's really worth its salt. Can't be bad.

ED RICKETTS

AWARD WINNERS

EMPIRE £29.99

● Three quarters of *Award Winners* is really stonking. The other quarter you can always format, or carve into an authentic ethnic earring, or something.

● And the box is quite attractive, too.

STF RATING 90 %

You only get to meet Potsworth when you've got as far as the third level. You're in the middle of a table at a children's birthday party – lots of gooey cakes, jelly pots, ice creams, candy cones and ice lollies, not all of which are as pleasant as they seem. Here you've got to pick up chocolate beans, which to start with is relatively easy and, finally, satisfying – if you don't feel thoroughly sick at the thought of all that sweetness, anyway.

And so it goes on as far as the climax where you're reincarnated as Potsworth – after

playing the world's greatest artist and a skateboard wizard – and you get to throw bones at the Nightmare Prince. And that's it.

VERDICT: On the negative side, this isn't actually very interesting or brain-stretching. Some of the puzzles in the earlier sections are pretty tough, and unless you're incredibly determined, you're more likely to be frustrated and want to give up and get onto the next level than hang around completing one which has lost its appeal. Each of the levels involves different

skills and thought processes, however, making *Potsworth and Co* essentially a selection of sub-games, and so novel for a while. The later levels especially are fast-moving, and the graphics certainly improve as you progress through to the bright and detailed carnival scenery of Level Five. While the other levels don't have the same detail, a lot of thought has evidently gone into its overall appearance, from the peppermint green of the background of Level Three to the clouds and rainbows in the following level. Sound is, as usual, not worth a second men-

tion. Overall, *Potsworth* is fun for a short while, but it doesn't offer anything new, exciting or original that can't be found in plenty of other platform games. Buy it only if you have £26.00 in your pocket and you really can't think of anything else at all to spend it on.

PAULA RICHARDS



● Dogs aren't made for climbing shiny tubes, why can't Potsworth see that? Apparently you have to beware of candy canes... but they don't seem to be doing him any harm. Could be handy when he falls and breaks his leg.



● Electric fences? Frightened of death by electrocution? What a wimp. Being macho is all very well, but it doesn't mean you can just walk through there. Oh no, you actually have to think about what you're doing.



● Wow! Just look at the colours at the carnival! See how smoothly Keiko's skateboard wheels spin across those spikes! And you've still got some energy left – that's what that open eye signifies, by the way.

POTSWORTH AND CO

HI-TEC SOFTWARE £25.99

● *Magic Pockets* is a better buy, both for graphics and gameplay.

● This is more likely to make you irritated and want to give up and get onto the next level than keep trying just that one more time.

● Pretty tough in places, and pretty graphics throughout.

● Expertise with the joystick is a great bonus if you want to finish this game.

STF RATING 75 %

FORMULA ONE GRAND PRIX

Several aeons ago, Geoff Crammond began writing a Formula One simulation. Two World Wars, three revolutions, 17 space missions and several hundred thousand other games later, it's here. Ed Ricketts fondly remembers those days when it was just a rumour

● Wow! Just look at that car scream round that corner and... reverse into the pits? Yes, indeed, *Formula One Grand Prix* is better than the real thing. Any game that means you can do things like that can't be bad.

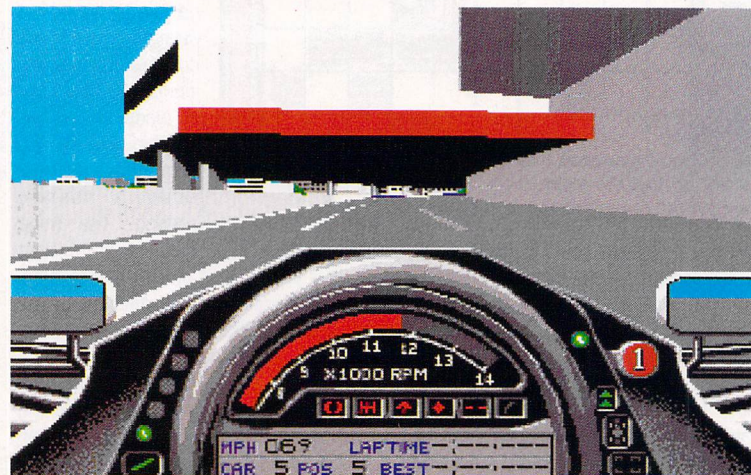
Fast cars and loose women. Fast women and loose cars. It's all the same in the heady world of Formula One Grand Prix racing. The thrill of "accidentally" running over an engineer! The fear as you round a corner and find you're going the wrong way round the track! The pause button as you flick through the manual to find what that flag means!

All right, so they're not very likely in real F1, but your first few games of *F1 Grand Prix* is full of stuff like this. This is a simulation, not a race game like *Out-run* or *Vroom*, so you can't just hop into the cockpit and lap Ayrton Senna.

In essence, *F1GP* is a complete simulation of the 1991 season, with all its drivers, teams, tracks and cars. If you were foolhardy, you could jump right in and attempt an entire season, starting in Phoenix and ending in Adelaide. This would probably result in your car being smashed up sometime in the first 20 seconds of the Phoenix race. The best idea, of course, is to get in

some practice on each track first. There are several "levels" of practice. The first is a simple whizz-round the chosen track without any other cars present. Next comes the non-championship race in two flavours: free practice – a race up to two hours with all 26 cars – and a qualifying race. Here you can enter the pits at any point you feel you've achieved a good time. When you've earned a good grid position – and had one last pre-race practice – you can do the actual race itself. The same applies to a Grand Prix race.

So, there are plenty of chances to learn each circuit better than the inside of your mouth and no excuses for crashing. Even fewer when you consider there are six "cheat" modes available. For instance, let's assume you're crap at changing gear: switch on the auto gear changer and you don't have

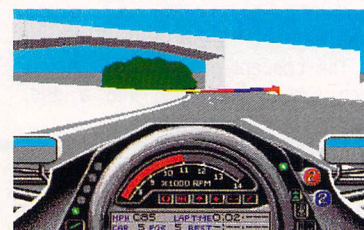


to worry about it. The ST even controls the braking and makes you indestructible if you like. (Of course you can't use these cheats in the Grand Prix mode. After all, you're not French.) Control is entirely by joystick, except for a few keys that toggle the driving aids.

All these aids are useful when you're learning to drive at 175 mph, but once you've got the hang of it (after, say, five years' practice) you find the most useful is the ideal driving line. This aid lays a dashed line on the track. Theoretically, following this line results in the fastest time possible on that track, because it's set up to take you around corners in the most efficient way. Not that following the line is easy – usually you spend so much time staring at the track you sort of forget the other cars.

Then, to make things even more complicated, there's the matter of your

car's setup. It's not enough to change the tyres and the oil every now and again in F1. You need to have your vehicle honed for each and every circuit. In practice, this means adjusting the front/rear wing downforce, the front/rear brake balance, the gear ratios and the tyres. These techie bits have an optimum setting for each track

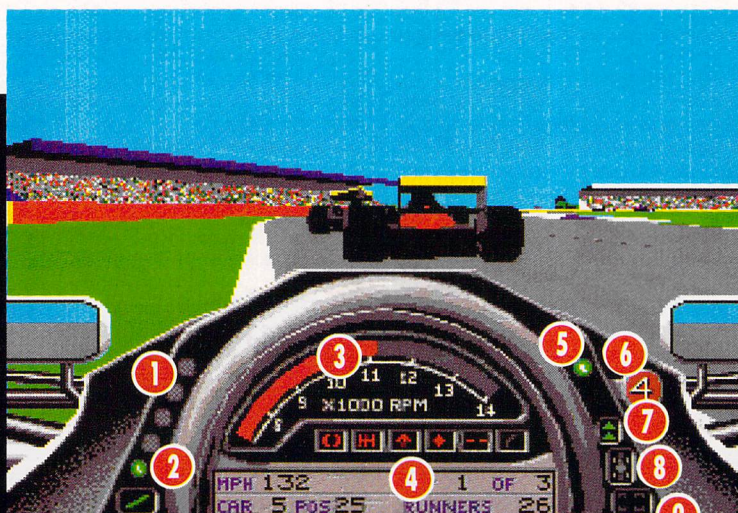


● The white line running down the middle of the track is, of course, a lane guide. Cars going this way drive on the left, whereas cars coming the other way are supposed to drive on the right. Or is it the ideal driving line? Something like that.

IMPORTANT BITS

Stuff to watch when you're racing...

- 1 **Difficulty level: ace to rookie.**
This controls the number of driving aids you can access
- 2 **Distribution of performance – the other cars can drive at their 1991 performance, at a random level, or with the same potential performance.** Which is harder and which easier is up to you
- 3 **Rev counter – counts revs. And does it rather well**



- 4 **Driving aids – auto brakes, auto gears, self-correcting spin, indestructible mode, ideal racing line and suggested gear**
- 5 **Driving status indicator – lights up when you're viewing your own cockpit. Useful for when you're flicking between various views (which isn't**

really advisable when you're driving anyway)

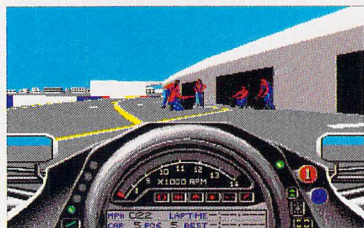
- 6 **Gear indicator – as well as the normal first to sixth gears, there's neutral, reverse (reverse? In a F1 car? Nasty) and a "power turn" gear so you can face the right way round after a spin-off**
- 7 **Detail on/off – as usual, more detail means a slower display but prettier pics. And vice versa.**
- 8 **Damage indicator – don't get this completely lit up; you'll live (or not) to regret it**
- 9 **Pits indicator – lights if you want to make a pit stop, and automatically if the crew think you should stop**

and it's up to you to find it. This means plenty of practice laps and much fiddling with the controls.

F1GP is a simulation that takes its graphics seriously as well as its subject. Each car is displayed in true 3D, not just from an anterior viewpoint, so when they spin, you see them spin. In addition, they're all marked up with the correct team colours and even the drivers' helmets are marked correctly. (No advertising, though.) There are marshals to the side of the track waving flags, marshals pushing off cars that have given up, a pit crew that wipes your windscreen for you, and even spurious details like the boat in the harbour at Monaco. This sort of detail tends to make the game's response a little sluggish and the frame update is nowhere near that of *Vroom*. Turning off some detail does speed things up, however.

Out-of-cockpit viewpoints can give you a whole different look at things, but they're not recommended for use when you're actually driving. They are good, though, for watching spectacular pile-ups around a 180 degree bend. It can also be used as a teaching aid: watching a hot-shot driver as he slipstreams past an opponent can give you valuable lessons in how to get it right.

Apart from the frame update, the only disappointing effects are the audio ones. In *Vroom*, they were perfect:



● Pit stops are easy. Scream in at 175mph, blast past the other bays, then you're guided in. You just have to stop before you run over the mechanic. Then it's a quick wipe, a tyre-change, some encouraging words from the crew like "You're last" and you're off again.



● "Get off! Look, I could've got back into the race easy! Right, that's it. Give me your name. I'll have you struck off the - the - Marshal's List. You're never going to work again, chummy."

huge, noisy engine rev samples, which pumped up the adrenalin brilliantly. Unfortunately here you get the standard weedy sewing-machine-about-to-explode chip noise. First it annoys, then irritates, and finally it's turned down.

VERDICT: Great. Well, fairly great. Because it's such a good simulation it's not such a good game; you need to put in slightly less effort than a real driver to even think about winning your first race, but only slightly less. We are talking serious late-night gameplay here.

Simulatory-wise you can't do better: everything's here save the *Fleetwood Mac* music. But don't expect to be gripped the moment you set hands on

the wheel. You can gawp at the graphics, flick through the views and marvel at the detail, but when it comes to driving... 15 races after you first load it up you begin to realise why the real-life drivers earn so much money. It's hard.

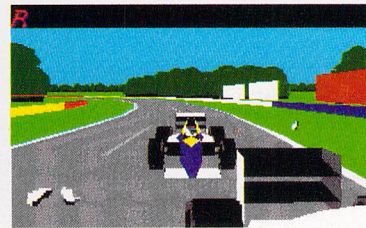
But, like most hard things, it's worth practising. Eventually you get to a point where you can just about begin to challenge the weaker drivers on the grid, and, from then on in, there's no stopping you. Weeks zoom by as you ceaselessly try to better your race time. You start telling people fascinating facts about the Grand Prix circuits. There's a feverish gleam in your eye: victory-lust, pure and



● The Trackside view is great for showing off when you manage to squeeze past another car. "No, no, just look once more. Look how I breezed past him. Wanna see it again?"

simple. So it's quite good really. For this price, though, you need to be sure it's the sort of game you want. For an exhilarating scream around some easy circuits, go for *Vroom*. For an in-depth, difficult and ultimately very rewarding simulation (let's face it, it's the nearest you're ever going to get to being in the cockpit) *F1GP* delivers, but slowly.

ED RICKETTS



● Now, you didn't want to do that. You can take three major knocks before you're winched off. The front of your car goes wonky and becomes almost impossible to control. Hit those pits.



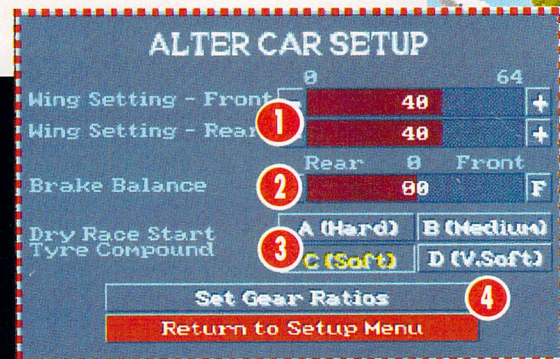
● Monaco in all its glory. For a real laugh, zoom off to Loews (the hairpin bend that doubles back on itself) and sit in the middle of the track. Then watch the other cars desperately try to squeeze through. Chuckle chuckle.

ADJUSTABLE BITS

Stuff you need to adjust to get the best performance from your car...

1 Wing downforce adjust - the more the wings push the car down onto the track, the greater the control you have around corners. But you're also slowed down on the straights because of the extra drag. It's a drag

2 Front/rear brake balance - alters the way in which the brakes are applied. It's best to have the bias towards the front brakes so



the front wheels begin to stop before the rear ones

3 Tyres - range from "A" (hard) to "D" (very soft). Softer tyres grip the track well and give excellent control in corners, but wear out ridiculously quickly. And, of course, the harder tyres last for ages but don't grip much. Qualifiers are ultra

ultra sticky, but wear out almost before you put them on

4 Gear ratios - these relate to the way the gears are set up which affects the speed you

can move up through them.

"Short" gearing, where the cogs are close to each other, is great for tortuous tracks where quick acceleration is needed. "Long" gearing, the opposite, is best for straighter tracks where constant speed is desirable. "Silly" gearing is when you wear baggy trousers and put your baseball cap on backwards

FORMULA ONE GRAND PRIX

MICROPROSE £34.99

- Disappointing sound effects shave a few marks off its score.
- Unlike *Vroom*, *Formula One Grand Prix* is not the sort of thing you would load up just for a quick drive.
- Incredibly detailed, but also extremely difficult to get absorbed into. Patience is rewarded, however.
- Better and more realistic graphics in this game than you're likely to find anywhere else, but they tend to slow down the display perhaps a little too much.

STF RATING 81 %



I25+

- Four ultra-sensitive fire buttons
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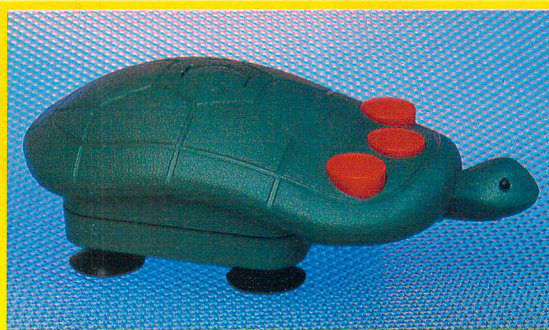
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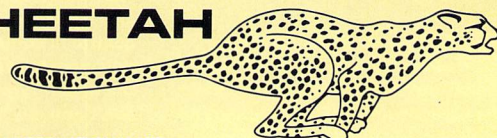
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STEEL EMPIRE



● *Steel Empire's* main map screen, from here you deploy cyborgs and "save" neighbouring countries from similar power-crazed Generals. What a lovely man you are.

You don't have to be short to be a great general, although it does seem to help. Short men tend to make far more ruthless generals – look at Napoleon, Alexander the Great and Genghis Khan, for example – all of them were under three foot tall.

Steel Empire gives you the chance to try a spot of annexing and subjugation even if you are only of a moderate height. Set in the year 2200 AD, it pits you against up to four human or ST-controlled contesting empires. Instead of the usual organic soldiers, you fight it all out using huge cyborgs – fusions of man and machine that are bristling with weaponry and optional extras. The game is split into two distinct sections

– strategy and combat, so you can play either a pure strategy game or a straightforward cyborg-trashing exercise. You need to be packing 1MByte memory to go anywhere.

After you have given a name to your megalomaniac alter-ego and decided what style of game you want to play, it's time to go onto the theatre of war – the peaceful planet Orion. Well, you can soon put a stop to all that mellowness and do a spot of invading. First off, you need to create some cyborgs. To build cyborgs you need factories and to build factories you need money. To get money you need to invade countries, and to invade countries you need cyborgs. Get the picture? You start off with enough cash to get attempted world domination off the ground.

The strategy section is rather *Risk*-like and simple enough to get to grips with. Individual's turns – whether human or ST – don't take long and there aren't too many options to wrestle with. It's not as easy as it looks either – you need to use the old noggin and plan things if you want to avoid getting pasted. There are nine different cyborg designs to wreak havoc with, ranging from the lowly Mercury – fast but venerable – to the mighty Titan – 750 tons of trouble. Each has its own strengths and weakness and on each of the five various terrains you need different battle tactics. When the cyborgs finally meet, you go onto the arcade section. You can opt to hand over control to your ST to take command of one of your



● The arcade bit features shooting and similar ecologically unsound behaviour. That's you swathed in explosions.



cyborgs. Everything is viewed from above and the joystick and a few keyboard commands are all you need. The battles are usually short and bloody with lasers and missiles flying in all directions. If you win, your empire expands, you get another capital, more money, factories and cyborgs. Just make sure you keep this up until you have exterminated the opposition – these empire builders are mean sods.

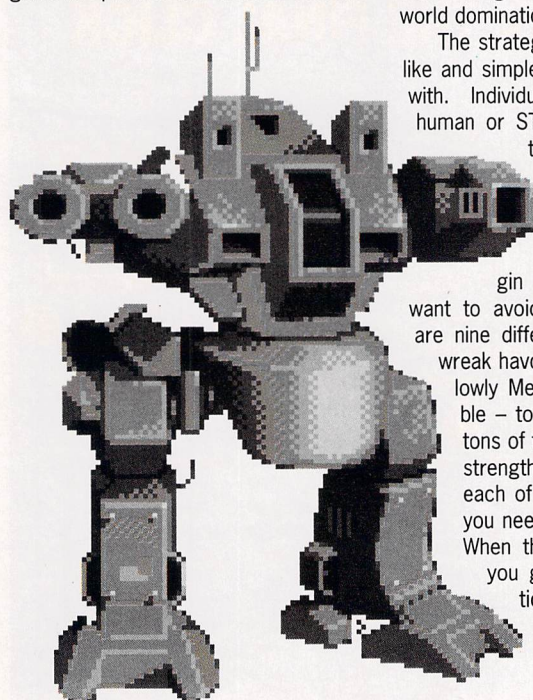
VERDICT: The graphics and sound effects are passable – they're nothing eye or ear-popping, but are up to the job. The strategy section is a pretty simple tactical manoeuvring job and the arcade a below-average blast.

The two hang together quite well to make a competent game. The gameplay is up to the job, although the artificial intelligence of your opposing cyborgs is a bit on the rosey side. It's particularly good fun with more than one human player, too. There are plenty of options to choose from to give you different styles of game.

It's not an adrenaline-producing effort, but it intermixes thoughtful strategy with arcade battles making an interesting game for those who – er, like this sort of intermix of strategy and arcade battles. Tuck one hand into your shirt and get dominating the world.

CHRIS LLOYD

● The full range of cyborgs. What did you have in mind, sir? Something to subjugate the neighbours with or did you have world domination in mind?



STEEL EMPIRE

MILLENNIUM £29.99

- More strategy than *Champion of the Raj*, more arcade than *Samurai Warrior*
- Not exactly state-of-the-art in any department, but a well integrated mix of styles

STF RATING 71%

A320 AIRBUS



● Your first task is to get past this fearsome gent. Make sure you take plenty of training flights to familiarise yourself with the aircraft and how it works.

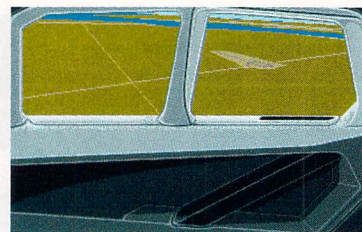
Disaster beckons. On your way back from Ibiza your airliner's entire flight crew has gone down with food poisoning. A stewardess asks if there is a passenger on board with flying experi-

ence who can safely land the plane and who didn't eat the salmon mousse. Alas, nobody comes forward – is the aircraft doomed? Hold on a minute, can't you do something? After all the hours spent bombing bridges in *F-19*

Stealth Fighter you must have some idea about how to control a plane! After several arguments and a scuffle, you are shown the vacant cockpit of the A320 Airbus – it's all up to you now.

Fortunately, this has nothing to do with the scenario for this excellent flight sim from Thalion Software. Rather than being thrown in at the deep end, you're encouraged to train as much as possible before carrying out "real" flights. Along with the software, you are given heaps of navigational charts and a fairly comprehensive manual. This teaches you everything from the basics of flying to modern navigational methods. To start off with, you can choose Training or Duty flights. Obviously training is a must to start with. The Duty option means you have to set up your own log book – all your flying experience is recorded to disk. To begin your training, follow the Flying Lesson chapter to give you the chance to take part in a take-off and landing demonstration. This helps even the hardened flight-sim expert find his way around the cockpit. You need to get used to the aircraft controls, functions and capabilities – as well as find the coffee machine.

Most useful for beginners is the availability of an automatic landing facility which goes to prove what an easy job being an airline pilot really is! From



● The first useful tip for beginners: watch where you're going!

here you progress to navigational training using the simulator's instruments. Contrary to popular belief, the auto-pilot is not an inflatable man for use in emergencies, but an important computer tool for the pilot. The capabilities of this computer are demonstrated well in this simulation and you must be able to use it before you proceed to duty flights. The system – as in real life – is based on a series of navigational beacons and air corridors which you have to navigate correctly using your auto-pilot. Of course, as you become more proficient, your use of this particular piece of electronic gizmo is limited as its facilities are taken away bit by bit.

Once you're confident that you won't get hopelessly lost flying between Heathrow and Gatwick, you're ready for the next big step of risking other people's lives as well as your own. Duty flights enable you to start your flying

LAST NINJA 3

Just when you thought your case of the ninjas had cleared up, along comes another one. The third *Last Ninja* is really absolutely definitely certainly probably the last. Armakuni, the ninja in question, is currently teaching a ninja class somewhere in New York, following his struggle with the evil-syllabled Kunitoki in that city (see *Last Ninja 2*). Just as his students are about to start "Nunchukas and their Relevance to Today's Society," Armakuni is whipped off to Tibet to have a last fling with Kunitoki.

As usual, this means a beat-'em-up set across six levels, with the familiar isometric 3D view. Each level has a theme that corresponds to one of six elements: Earth, Wind, Water, Fire,

● Answer this question: are you a trained ninja, fresh from a classroom somewhere in New York, stuck in the middle of Tibet with an awesome challenge facing you? If Yes, you're the Last Ninja. If No, you're someone else.



Limbo and Void. Apparently, Buddhist temples have six chambers devoted to each element, and because the ninja has to enter one of these temples at the end of the game to beat the bad-die, he needs to win each level. If you don't quite follow the logic of this – good.

Wandering around the levels you come across three things. One, Kunitoki's disciples – unpleasant people with substantially large ninja-damaging weapons. Kill them by punching and kicking. Two, weapons – like swords, nunchukas and shurikens. These can be used on the gree-

bles. Three, miscellaneous – odd objects like branches and bits of wood. These you can use to either manufacture weapons or solve certain puzzles. For instance, to make nunchukas – those flaily things Bruce Lee was always wanging about his head – you need to collect some wooden branches from a bush, and a chain from a hanging flower basket. A quick bit of DIY later and you've knocked yourself up a deadly weapon. Or you might use gunpowder to blow a rock off a ledge, so it falls into a gap and fills it, and you can then pass the screen. To complete

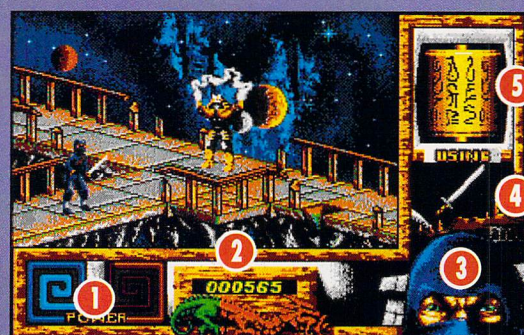
NINJA 3: THE FINAL CLICK

Er – actually you don't click on anything at all, the icons just give you vital information

① Power indicators – on the left is your energy, on the right is the current adversary's. Most need to be killed twice before they deign to lie down permanently.

② Bushido power. The greener the dragon, the more Bushido you have. You get it by fighting an armed opponent with your bare hands (or with the weapon he's using rather than a more powerful one) and you lose it by running away.

③ A ninja bloke who blinks occasionally and scowls menacingly.



④ The weapon you're using. You can cycle through the ones you're carrying by pressing the Spacebar.

⑤ A prayer scroll. When you get near an object, it scrolls off and a picture of the object appears in its place, so you know it's collectable.

career in earnest (an airport in Belgium). You must first draw up your flight plan including your destination, the number of passengers, and your departure time. You must also calculate your fuel requirements accurately.

After each flight you are given a percentage rating on your performance. If you land with too much juice, you're penalised, and if you don't land with enough, well...! When you have completed the appropriate number of duty flights you can choose to advance

a rank by taking a Qualification Flight. You also have a regular Standardisation Check to ensure that you still fulfil the requirements of your current rank. Visually, A320 Airbus appears very similar to other flight-sims. The vector graphics are rather ordinary and not particularly fast. Disappointingly, though, there are no outside views. The cockpit display is clear and well presented. As you would expect, the cockpit window is smaller than you find in combat flight-sims because clear instrumentation is more

important than good views of the cloud formations. The sound effects make the aircraft sound more like a lawnmower than an advanced jet: you just have to turn the volume down when it drives you gaga. The controls are well thought out and easy to use. Main control is via joystick or the mouse, but use of the keyboard is vital for many important functions, including the auto-pilot.



● The graphics are factually accurate – this is the Severn Estuary – but night flying doesn't make them any prettier.

likely to keep you up way passed your bedtime – just don't leave the landing light on.

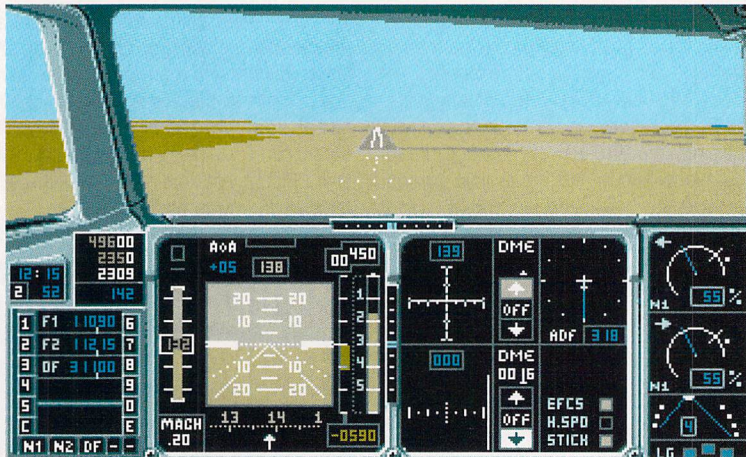
RICHARD BRADSHAW

AIRBUS A320

THALION SOFTWARE
£25.99

- A serious flight-sim. A very different beast to *Knights of the Sky*.
- More detailed and accurate than most combat flight-sims.
- Not as fast as *Mig-29 SuperFulcrum*.

STF RATING 79 %



● Landing at Cologne-Bonn airport. Note the beautiful architecture of the terminal building and the rolling German countryside. A320 assumes you want to learn to fly for the sake of it rather than for the joys of looking at the scenery.

each level, you need to find an exit scroll and duff up the end-of-level guardian. Each level contains part of another scroll, the bits of which you need to collect in order to complete the entire game.

VERDICT: *Last Ninja 3* is okay in its own way, but it's flawed quite badly. The movement system is so fussy that you need to spend the first ten or so games trying to master it. Because of the 3D, the ninja doesn't react to your joystick movements in the way you expect, which leads to all sorts of embarrassing falling-off-ledge-accidentally situations.

The object manufacturing idea is a good one and adds a little mystery to what could have been a straightforward findy-fighty game. The graphics are a tad disappointing though – they've got a sort of dingy, scrappy look. Passwords for each level mean you should eventually be able to complete the game.

If you've stuck with the Ninjas this far, you may as well get the final episode. If not, you might find the attraction of this hooded man with nunchukas a little mystifying.

ED RICKETTS

LAST NINJA 3

SYSTEM 3 £25.99

- Looks quite a bit like *Ninja 2*, but there's a much greater adventure element in this one.
- The plot sounds a lot like *First Samurai*, and if you're looking for an Oriental beat-'em-up FS is a better bet.
- Could have been really good with more professional graphics and some samples.

STF RATING 72 %

THE WONDERFUL WORLD OF NINJA

Each level's graphics, puzzles and specialty bad guys correspond to its element. For instance on the Fire level, the baddies lob fiery bolts at you and tend to explode when they die. Messy.



● **Level One: Earth.** How do you represent earth? Stick in loads of trees and woody-type puzzles, like the aforementioned nunchuka "teaser."



● **Level Two: Wind.** Okay, so it looks a bit watery here, but it's mostly windy high up where epic struggles occur – and usually end by you diving over the side because, for some reason, you thought "up" would make you go up.



● **Level Three: Water.** Glub glub and, indeed, glub.



● **Level Four: Fire.** Taunt the geezer on the other side: "Having two swords isn't going to help you much over there, is it, Mr so-called adversary person."



● **Level Five: Limbo.** System 3 can cheat here, because, of course, no one knows what limbo is like. (Except regular viewers of *The Word*.)



● **Level Six: Void.** Strictly speaking, this level would entail 15 minutes of staring at a black screen. Instead we get some pretty views of Escher-like platforms suspended somewhere in space.

SAMURAI – THE WAY OF THE WARRIOR



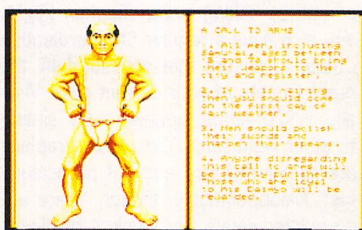
● A country in turmoil. The teeming cities pelt each other with copies of *Samurai – The Way Of The Warrior* and the occasional uprooted bonsai tree or Honda Prelude.

The Japanese – they make cars, don't they? Yes, that's what I thought, but it transpires that they also named the 16th Century as the Sengoku period – possibly after the Nissan Sengoku which was being designed at the time.

Actually, Sengoku means "a country at war with itself." The Samurai were at large and people cast small pebbles at cats in their fear. It's an Impressions

wargame, is *Samurai – TWOTW*. The idea is that, using various maps and selection screens, you build up the money being earned in your five cities on the island, then buy troops then go and invade a load more cities.

It's all point and click stuff, and every time you get to have a battle, it appears in real-time. Which means it's pretty slow. As you'd expect, there are loads of tedious factors concerning



● It was the cool texture of the bulging underthings that first drew Obi-Wan to *The Way of the Warrior*. That and the fact that he'd been made redundant and had some time on his hands.

your money:troop concentrations. Basically, it's all pretty well thought out and, better still, almost atmospheric. A decent manual gives you a pleb's guide to Samurai-dom, and from then on, you balance the armies you produce, keep everyone happy and move your forces around the main map judiciously – and with the mouse.

VERDICT: Impressions are getting pretty good at these sorts of games.



● Hundreds of blades flash, blood is drawn and there's still no sign of Monkey, Piggy and Sandy. Why isn't Monkey on TV any more?



● At last it's closing time at the Noh-Kan-Do dojo, and the eager students continue to practise their teaching skills in the open fields located just behind the car park.

This one looks quite interesting, has a reasonable amount of detail – or at least, things you can do in it – and doesn't run at the same pace as continental drift. Despite all this, it doesn't come close to being *Populous*, and it still belongs on the "oh-that's-where-I-keep-all-the-wargames" shelf.

JAMES LEACH

SAMURAI – THE WAY OF THE WARRIOR

IMPRESSIONS £29.99

- Faster than *Ancient Battles*, but without the flexibility of that game.
- In general, this is easier to use than most military wargames.
- There's a good attempt at that elusive quality "feel," too.

STF RATING 70 %

QUATTRO FIGHTERS

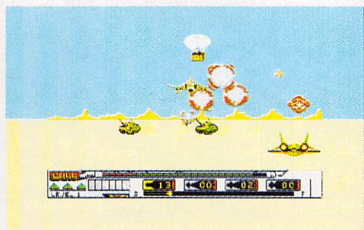


● It's unlikely that the SAS are trained to run at artillery-posts, shouting "Who dares, doesn't last very long." But if they did, it may look like *SAS Combat*.

The world used to be a peaceful place. Then life formed and, from that moment on, everything spasmodically tried to kill everything else. This violence is depicted in four games on two disks, as *Quattro Fighters* puts you in the driving – er, flying, shooting and punching seats.

SAS COMBAT

Not a great deal is known of these furtive fellows, except that, according to this game, they wander around in full view of an enemy encampment seen from a sort of high-up 3D. What you have to do is control one little man while he attempts to dodge the massive bullets that float towards him. You simultaneously have to deal much harm to those who fired them. It's not particularly good. It's actually slow and rather childish, in fact.



● *Quattro Fighters*, by CodeMasters. Not about people who wrestle Audi cars, but four cheap and "cheerful" games. One is the interesting *Mig 29*.

MIG 29

Like *G-LOC* without the LOC (or the G). You whizz along over a 3D scape, moving in the four joystick directions. Tanks, enemy planes and trees scroll rapidly towards you and you must avoid or shoot them. That's about it, really. It's fast, but it feels exactly like a computer program (and nothing like a real plane).

KAMIKAZE

Climb into your last resting place and fly it over a massive enemy installation. This one's a top-down vertical scroller, which would be quite good fun if it (a) wasn't so difficult and (b) wasn't so slow. The slowness makes everything so tedious you might be better off using the disk as a makeshift beeswax container and jam-scraper.



● If you play *Kamikaze* properly, games tend to last around two or three seconds. So – er, play them badly and you're bound to do well.

GUARDIAN ANGEL

Forget about helping people on the Underground. Instead, wander along a series of rather cartoony, urban-setting, punching folk. You are beset by dozens of sweaty men who cluster round and grunt. They also punch you as well, so you just punch them harder. *Guardian Angel* isn't up to the classiness of some punching games, but it's probably the best thing on *Quattro Fighters* which isn't saying a lot.

VERDICT: Not very good at all, really. None of them, so it's not really worth spending your money. The only thing that compensates for putting all these terrible games together in one box is the fact that they work out at less than £2.00 each.

JAMES LEACH



● Then Toby commandeered the forklift truck and drove it nearer to the heaving mass of fighting, beer-drinking men – a common-place sight in *Guardian Angel*.

QUATTRO FIGHTERS

CODEMASTERS £7.99

- None of these games are really any good at all.
- They have the potential to interest and amuse small (and extremely violent) children, but they lack the edge.
- But at this price the feeling of getting value-for-money does increase.

STF RATING 48 %

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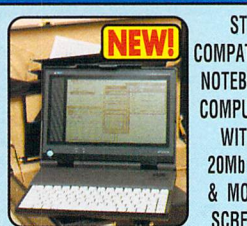


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SAINT DRAGON



● *R-Type*. Oops, sorry, it just slipped out (as it were). This is *Saint Dragon*. Saint Dragon was the patron saint of... um... dragons, apparently.



● At the end of Level One, prepare to meet the fearsome mechanised... cow? Yep, and it really is a toughie. Even when you manage to blow its head off it carries on spitting lasers at you.

A little while ago, a trip to the software section of John Menzies would find you wading through piles of shoot-'em-ups, all begging for you to shoot them up. But recently the genre (useful word, that) seems to have fallen out of favour.

Well, never mind about that. Kixx are here with an oldie from '89, and, by golly, it's an incredible bargain at only eight quid. *Saint Dragon* has you playing the beatified mythical thingy itself, only it's sort of a mechanical one that snakes around very much like a snake.



● **Informative Caption:** directly after Level One you find Level Two. This is similar to Level One, but, as you can see, slightly different in several telling ways.

This is a horizontally-scrolling affair, so the baddies enter screen right and you just have to blast away at them. One hit and then you've had it – there's none of that pathetic pansying around here, though you do benefit by getting loads of credits.

Here and there are those groovy power-ups that need to be shot before they work. Pick these up and you can treat yourself to exciting stuff like triple fire, large lasers and bouncy shots. You need to get all these things for the end-of-level guardians, which, in the case of Level One, happens to be a large mechanical cow.

And so it goes. The graphics are interesting, with some good detail, and

they all shift around with no jerking. Sound is execrable, as always.

VERDICT: *Saint Dragon* is a bit of a surprise, really. You don't normally expect a great deal from a budget re-release, so if you find a game that's fun, challenging and also attractive to look at – a bit like *Saint Dragon*, in fact

– it's a bit of a bonus. Perhaps *Saint Dragon* will remind the software houses of how much fun a good shoot-'em-up has the potential to be.

ED RICKETTS

SAINT DRAGON

KIXX £7.99

- Like *R-Type*, but faster and perhaps just a bit tougher.
- Detailed graphics and solid gameplay. In fact, it's a great little blaster all round.

STF RATING 78 %

UTOPIA – THE NEW WORLDS

Casteth back your mind to issue 29 and a game called *Utopia*. Good, wasn't it? Gremlin thought so too, and decided to make up some new worlds for it. And wouldn't you know it, here they are. Just in case you don't know what

Utopia is all about, here's a quick rundown. You're the commander of a colony somewhere on a barren planet, a colony that needs to grow and prosper to survive. In your hands is the organisation of food, work and defence.



● *Utopia* was a brilliantly cracking game. *Utopia – The New Worlds* makes it even better – well, a bit anyway. See, look, these graphics are rather different.

Structures such as hydroponics farms, shipyards, living quarters and laboratories need to be built by allocating your colonists to each. There has to be enough food (from the hydroponics) and enough living space for them before they can get to work. Research that leads to new and better inventions takes place in the laboratories.

Meanwhile, elsewhere on the planet, another alien race is building up its colony. Sooner or later, this race is likely to attack you, and you need to be ready. That's what the ship and tankyards are for. While you're stocking up the food, you need to be stocking up the weapons as well. They range from the not so good to the damn hot, but the better ones take an age to build.

The ultimate goal of each scenario is to achieve a Colonist Quality of Life rating of over 80% – that's assuming you survive the alien attack. Sending spies into the alien city before they attack can give you valuable information on how they may do so.

The *New Worlds* provide you with ten new scenarios: new planet graphics, new alien races and new problems to face. The basic shell of the game doesn't change at all.

VERDICT: There's not all that much to say about data disks. If you like the original game, they offer another three months of frantic obsession; if you don't, they're no more use than small blue square things.

Utopia is a very good game, but *The New Worlds* don't improve it much, they're just supplements. The new landscape graphics are interesting and all that, and it's good to have

some different colony problems facing you, but that's all. They don't change the content of the gameplay, unlike, say, the *PowerMonger* data disk.

If you think a few more hours' play is worth £15.00, pay yer money and take yer choice. No one's going to hate you if you don't.

ED RICKETTS



● And – er, so are these. Another scenario, another set of graphics. This is about as good as it gets.

UTOPIA – THE NEW WORLDS

GREMLIN £14.99

- Not very much to offer except a few new graphics and problems.

STF RATING 64 %

SUPERSKI 2

Oh good, he said through gritted teeth, another sporty waggle-your-joystick simulation.

The game centres around an olympic tournament-style winter event. You have the option of practising in one of six disciplines or going in for a competition against four ST-controlled adversaries – and up to three friends if you want.

You have to tackle each event with a different approach if you don't want to break your neck. The events to choose from include old faves like the downhill and bobsleigh, to more diverse variations such as the ski-jump and hotdogging. Each event has its own control methods which are pretty tricky to get used to, but after a few goes on the practice run, you begin to feel confident enough to take on the competition proper.

The graphics are surprisingly good and very fast indeed, comprising vector graphics for the bobsleigh and simple alternating strips for the downhill slope. They're most noticeable on the ski-jump, where you get a bird's eye view of the skier leaving the hut at the top and get-



● Here we go then, try and get those parallel turns right – this is an Olympic competition. Remember, plant your stick, lean into the slope, look down the hill and *don't* fall over.

ting larger as he comes closer – extremely quickly, too – until you see him descending into a great crash landing.

The best touches are when you're on the bobsleigh you can see the driver's eyes, and when you fly over the side they nearly pop out of his head in an amusing cartoon style. The sound is just as good with a range of different up-beat tracks which accompany the loading and option screens – and when you're skiing, the skis make a crispy skiing sound.

VERDICT: This is well put together with a fair amount of gameplay. It is just a skiing game though, so the novelty *will* wear off, but it's still an enjoyable little game.

ADRIAN PRICE



● Superski 2 offers a choice of six events ranging from the bobsleigh to bungee jumping to reminiscing and drinking mulled wine in the chalet afterwards.

SUPERSKI 2

MICROIDS £25.99

- Not a bad game. Some interesting graphics and racey tunes...
- ...but it's just a skiing game and could soon get boring.

STF RATING 68 %



● Get ready, get set, go! Although some of the graphics seem to imply you have to be an expert, there is the opportunity to practise away from the attention of the world's media.

PSYBORG

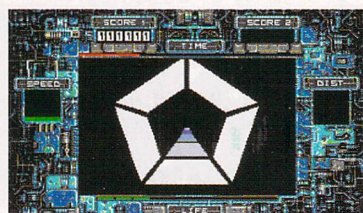


● Before you hit each planet you're presented with this incredibly informative information that tells you – well, nothing much at all, really.

Once more our Gallic cousins have come up with a crazy game design, such as only they know how. And believe us, this one is mental.

You take control of Duncan Norton who's been given the job of seeking out enemy Androptere (?) Psyborgs and eliminating them. But Dunc's not your common or garden Psyborg hunter. He's a psychic and can project his spirit through space in order to get the job done. Quite why Loriciel just didn't bung him a spaceship armed to the teeth is impossible to say, but then this wouldn't be the game it is with a spaceship.

The game is a basic reaction test. Simply put, you race along a tunnel while trying not to fall off and get lost in space for all eternity. The tunnel is four-sided and occasionally panels are missing from the side you're racing along. This



● Occasionally, there are gaps where you have to jump. Lingering around in mid-space for more than a quarter of a second isn't recommended.

means you often need to rapidly rotate in space to switch to another side of the tunnel, or else you fall off into a void and lose energy.

It's similar to *Stun Runner* in the looks department, but the gameplay – racing along a tunnel at breakneck speeds, trying to collect objects and avoid coming a cropper – isn't very original. After plenty of tunnel-racing you reach the second part of the game – the shop, where an extra-terrestrial shopkeeper sells you extra time so you can complete the longer courses.

The game's set over eight solar systems with a total of 40 planets, so it's not small. Unfortunately, however, the word "repetition" seems to become lodged in your brain. Level after dull level you have to try and keep on the Vortex by spinning around the walls and missing the gaps, and it all gets somewhat monotonous.



● Think of that long tunnel thing as a road. Think of yourself as a car. Think of the gaps in the tunnel as police cars. Now you know what *Psyborg's* about.

VERDICT: This obviously French game hasn't got very much going for it except that it does move fairly fast and smoothly, but in a field of very strong titles, this game doesn't stand up too well. This *isn't* a good game and the gameplay is only just on the right side of the border between existing and not. You'd be better off spending your cash on something else.

ADRIAN PRICE

PSYBORG

LORICIEL £25.99

- Doesn't stand up too well as a game, and unfortunately, it doesn't even have great graphics to fall back on.
- Fast and testing for a second or two.

STF RATING 46 %



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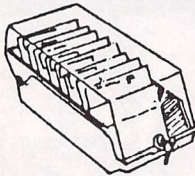
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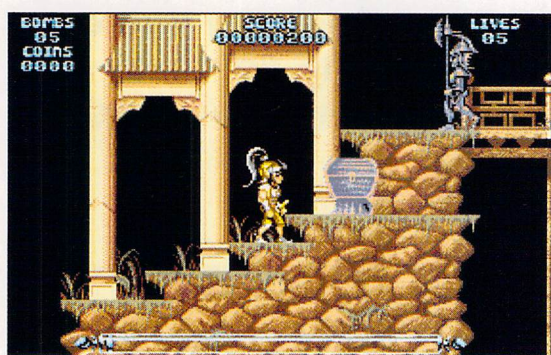
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LEANDER



● The enormous pink insects that inhabit the caves are like the dragon – they're all heart underneath that shiny salmon exoskeleton. Never mind about that though, kill them anyway.



● "Don't worry, Alcan, my dear, I'm on my way to rescue you. Oh sorry, Lucan. No! No wait just a moment! I know – it's – um – Lucanna? What sort of name is that?" Leander has obviously never heard of people in glass houses throwing, etc.

Good grief. The number of ST games that have been based around some poor love-stricken fool who wanders off through unfeasibly dangerous lands just to get his girlie back – is quite frightening, isn't it? A whole genre of games about brain-dead heroes who just don't realise *they're going to die* – horribly.

Any road, the hormone-spouting geezer here is called Leander and he's all agog for a girlie – well, a princess, actually – called Lucanna. But the poor young thing's been kidnapped, and on her 18th birthday, too. Kidnapped by who? International terrorists? A desperate bunch of guerillas? Nope – a dragon, Thanatos. Anyway, Leander gets all dewy-eyed and rushes off heroically – but very stupidly – to get his tottie back from the clutches of iniquity.

Leander is a platform game set over three large worlds with multitudes of sub-worlds. Each sub-world has a specific quest like recovering an object from one side of the level and then exiting through the teleport on the opposite side, so you visit every part of the level and its hidden nasties. There are lots of these: blue knights who swipe at you with pikes, green archers who arch at you, and horses pulling carts.

Bash open the chests scattered around and you can collect goodies, the least of which are coins, which you can use in the shops to buy good stuff like extra weapons and armour. Holding down the fire button increases the strength of some weapons. A full weapon blast is necessary to dispatch certain biggish enemies, like (gulp) Thanatos' Ethereal Presence or the Giant Otter (?). Leander's armour

strength can also be increased. Every time he's hit he loses a hit point and changes colour. So if he's in the pink, he's not necessarily in the pink.

VERDICT: It's hard to see the attraction of most platform games. Most of them are huge mental-mapping exercises with repetitious and unchallenging gameplay. *Leander* isn't that much different, but at least it has some snazzy graphics. At the superficial level which platform games operate on, this is a definite bonus. The animation is fluid, the backgrounds are moody and the sprites are impressively sized.

Leander can't ever hope to compete with the long-term interest of a game like *Legend*. These sorts of games are fine for those console types who can't live without sight of a hard-to-get bonus for a week, but for the rest of us one platformer every six months is sufficient. For this six months, choose between *Leander* and *Harlequin* – they're both as good as each other.

ED RICKETTS

LEANDER

PSYGNOSIS £25.99

● Yes, more platform nonsense. Good sort of nonsense, though.

● Swishy graphics, for once, do make the game better than it would have been with *Llamatron*-style graphics.

● But it's nothing to gawp at.

STF RATING 68 %

FORMAT RATINGS REVIEWED

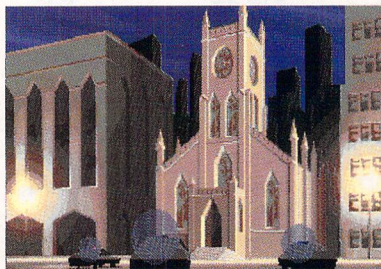
How did *FORMAT* rate the games reviewed over the last three months?

ROBOCOP 3	STF 34	94%
LURE OF THE TEMPTRESS	STF 35	92%
REVENGE OF THE MUTANT CAMELS	STF 34	92%
KNIGHTS OF THE SKY	STF 34	91%
RICK DANGEROUS	STF 34	90%
AWARD WINNERS	page 72	90%
Legend	page 70	89%
Germ Crazy	STF 34	88%
Gobliiins	page 69	87%
Pacific Islands	STF 35	87%
Titus the Fox	STF 34	85%
Dizzy's Excellent Adventures	STF 35	82%
James Pond	STF 34	82%
Formula One Grand Prix	page 74	81%
Airbus A320	page 78	79%
Harlequin	STF 35	79%
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Sir Fred	STF 34	79%
Elvira the Arcade Game	STF 34	79%
Saint Dragon	page 82	78%
World Rugby: Five Nations Edition	STF 35	78%
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Samurai – TWOTW	page 80	70%
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Utopia – The New Worlds	page 82	64%
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Alcatraz	STF 35	54%
Ninja Collection	STF 35	53%
Brides of Dracula	STF 34	49%
Quattro Fighters	page 80	48%
Psyborg	page 82	46%
TNT 2	STF 34	44%
Ghouls 'n' Ghosts	STF 34	44%
Space Gun	STF 34	32%

NOTE: Games in red are reviewed in this issue

GAMEBUSTERS

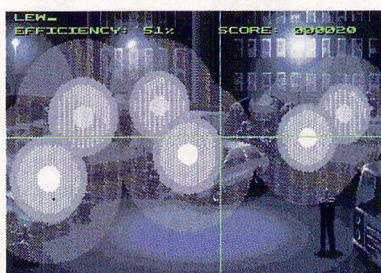
Ed Ricketts now as he tries to answer these queries in *Life: A User's Guide**



● At the church, Robo was having a few problems kneeling down. Mind you, Robo finds it hard to even walk without everyone giggling at him.



● Why doesn't someone just shoot Robocop straight through the mouth? Isn't there anyone in the entire city of future Detroit who has thought of this? Let's face it, millions of filmgoers the world over thought of it in the first ten minutes of the film. Anyway, these are some lights. From the game. (Not the film.)



ROBOCOP 3

OCEAN

The full monty for this marvellously violent smash-'em-up from Tim Whitlock of Cambs who gets himself a full £50 for being so super.

LEVEL ONE: Don't bother chasing the van, just go straight to Lewis. On all the car levels there are features which are good for a laugh. If you want instant acceleration, pause the game and push forward on the joystick for about 20 seconds. Keep pressing forward and unpause – you should do 0 to 240 mph in about a tenth of a second.

LEVEL TWO: Use the map or skip the level using the following method: at the picture of Robo walking through the smoke, swap disk B for disk C. When you're asked for

disk B, put it back. You should now go straight to the church.

LEVEL THREE: Not much explaining to do here... except, if you go into the sewers and succeed in killing all 60 squatters, the game ends. So face the Rehabs instead.

LEVEL FOUR: You're given the choice of going to the cop shop or the hotel. Go to the hotel.

LEVEL FIVE: Use the map for this, too. In the lift, no matter how many times you use the cursor up key, you only reach the third floor – tricking you into thinking this is the top. Once you're on the third floor, press the up key again and go to the fourth floor. If you want to skip this level, use the same

POPULOUS 2

ELECTRONIC ARTS

Chris Hilton of Sheffield thinks you ought to know about these tips:

EFFECTS

ACHILLES: This knight is immune to all the fire effects, including magma from a volcano.

ADONIS: This chap is a useful knight because he's not affected by Plant effects. He should only be used if you have a leader whose energy level is into the fifth pole. Keep a watch over him until he separates twice, otherwise he could be bumped off prematurely, thus wasting a good knight. (Just like watching *Star Trek*, actually.)

ARMAGEDDON: Best used in conjunction with Plague since anyone infected with Plague dies when the icon is selected. One thing to note is that when using Armageddon, it's also possible to use other effects. This can be very useful: bunging out a good Earthquake can deprive the enemy of quite a few knights. Likewise, Baptismal Fonts is a good way to get extra men. Unfortunately Armageddon has the tendency to halve your score.

BAPTISMAL FONT: When used around the Papal Magnet, these can provide a good way of converting men to your side. It's best to use them at the start of a game when there is no dense population.

BASALT: Once formed, Basalt can only be seen on the close-up map view. This means the enemy doesn't know that you've built a pathway to his land. It also makes it difficult to raise buildings, since you can't grow anything on Basalt.

BATHOLITH: This effect is very similar to the volcano from the original game, since it raises land as well as bringing up a few rocks. For the Earthquake to do any useful damage the pointer must be well into the icon – you need a lot of Batholith energy. One use is to raise land when you don't have access to the Raise/Lower Land function. However, the effect is best used around the enemy's Papal Magnet, because it can cause the Magnet to be blocked off and thus prevent the enemy from using it. To make sure this happens, only carry out the effect when the leader is actually at the Papal Magnet, otherwise he can just move it and send the leader to the new position.

EARTHQUAKES: Always make sure you use Earthquakes well away from your own land, since they tend to go wherever they want. However if you put more experience into Earth effects, they can be sent in the direction you want a little easier. If an Earthquake does encroach on your land, lower the land that it affects, otherwise anything you raise is destroyed.

FIRE COLUMNS: These tend to concentrate on high ground. They can be put out by submerging them in water.

FIRE RAIN: This is one of the best effects available. They can destroy vast amounts of land and start huge forest fires.

HELEN OF TROY: This lady is quite useful, since she doesn't cause any damage when charming a person and evicting them from their home. She cannot be destroyed by



● Hardened lava – or basalt – can be useful for filling up those cracks in the side of the house. Simply chip the basalt into very small pieces, mix it in with a bit of Polyfilla and epoxy resin, and wang it in the crack. Cheap, reliable and ecologically friendly.

drowning, so other methods have to be used to get rid of her. However, she can be affected by Baptismal Fonts, so get rid of any that appear in her path.

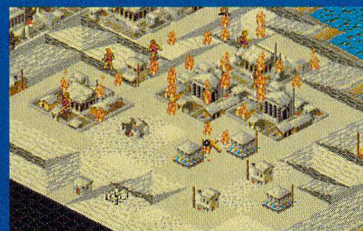
HERACLES: One useful function of this character is that, when knighted, your leader's energy doubles. Heracles is immune to the effects of Walls and Earthquakes.

LIGHTNING: Using Lightning is a very good way of killing off enemy leaders and reducing large buildings to rubble, making them easier for your knights to destroy.

MOVE PAPAL MAGNET: This is perhaps the most important effect, since when it's used in conjunction with the Fight and Settle options, it can clear large areas of opposition land.

ODYSSEUS: If speed is required, then this is the knight to use. He is immune to all air effects.

PERSEUS: The best knight to use. He



● Tip Two: when it rains fire, wear asbestos headgear. Asbestos can be found hanging around old, unsafe mining shafts. You can test whether it's real asbestos by having a good sniff of it – if you cough up anything resembling a lung, you're on to a good thing.

avoids any enemy effects and so can be left to fend for himself.

PLAGUE: This is best used at the start of the game because it deprives the enemy of lots of energy required later on.

PLANT FUNGUS: A spread of Fungus is a very efficient way of clearing large expanses of flat enemy land you can then use.

RENEW LAND: This is the only way of making land destroyed by a volcano useable. This option also destroys effects on the ground such as Swamp, Basalt and Baptismal Fonts.

ROADS: Good for a couple of applications. They can stop Fungus spreading and are useful for guiding the enemy towards effects such as Swamps, Fungi and Baptismal Fonts.

STORMS: The effects of a heavy storm can destroy large amounts of land, particularly when you take into account the fact that

trick as on the second level. Make sure you use disk C and do the swap while Robocop is driving into the hotel grounds. For some reason, when you die in the hotel the game carries on.

LEVEL SIX: This is simply the return to Rocket Motors – the van is a decoy.

LEVEL SEVEN: It's time to fight Otomo. When you start and he somersaults towards you, go round him and to the opposite wall. Turn so you're looking at him. He turns to his right and tries to scare you by jumping on the spot and waving his sword, so take your gun out and shoot him. Keep it out and, as he somersaults to the far left corner to escape, follow him with the gun still firing – easy when you get the timing right.

LEVEL EIGHT: This is the jet pack section you've been practising so much on the arcade bit. First, trash the two helicopters which appear in front of you – slow down a bit to give you more time to get locked on. Now, circle above them and wait until you see the third helicopter. Doing this enables you to get the chopper in your sights before he gets close to you. Now you have to blow up the ground threats before they defeat the friendly forces. Do this by flying over them and shooting as many as you can before getting too close to the ground –

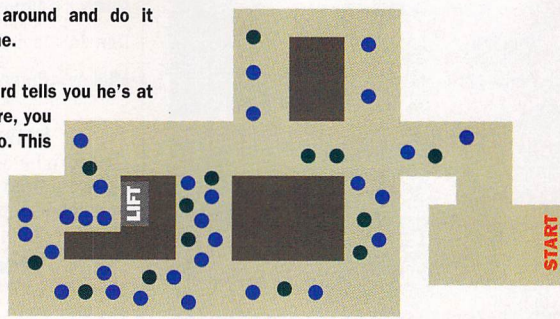
then gain height, turn around and do it again until they're all gone.

LEVEL NINE: Mac Daggard tells you he's at the OCP building and there, you find your old friend Otomo. This is a repeat of Level Seven but in a smaller room. If you walk around for a bit, you get to a point when he turns his back on you. Don't look a gift horse in the mouth – give him some flak. Now Otomo thinks it'd be fun to let off a small nuclear explosion, from which you escape in a series of animations. The OCP building is destroyed with a corner shop and a hot dog stand – but you're okay. You've succeeded! – although most of Detroit's population is dead. Oops.

Oh, and from Nicol Jarvie of Carluke in Scotland: during the fight with Otomo, press <P> to pause and leave it briefly to replenish your efficiency.



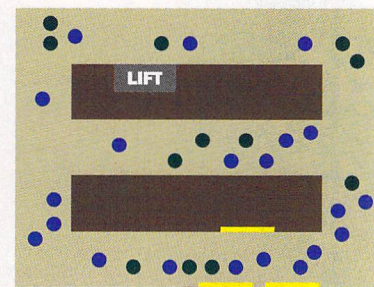
Kidnapper (be careful who you shoot)



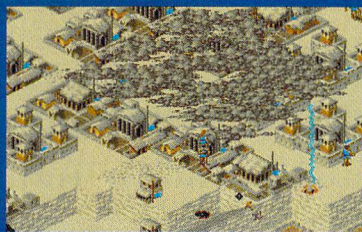
FLOOR 1

KEY
● HOSTAGE
● SPLATTERPUNK
○ ROUTE THAT LEADS YOU TO THE WRONG PLACE

FLOOR 4



Mac Daggard is in here – go up to door and shoot it down. He escapes out of the window – the second door on the left



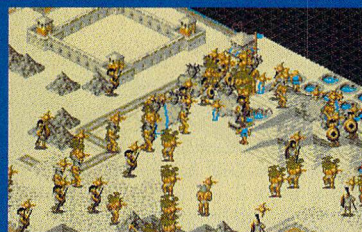
● Occasionally you might notice a thin covering of a white substance on the ground. Do not be alarmed: this is nuclear fall-out, and is perfectly safe as long as you do not touch it, look at it, hear it, come within 2,000 miles of it, eat it or think about it.

lightning strikes from storms can set fire to trees and start forest fires.

SWAMP: It's best to use this function at the beginning of a game since this restricts the opposition's growth. However, you have to remember to clear swamp land (using Renew Land or raising/lowering) before your men come near it.

TIDAL WAVE: This devastating effect reduces land to sea level and can only be stopped by land three or four steps higher than sea level. After a Tidal Wave, the opposition tends to raise the land to provide settlements, so use Whirlwinds or Whirlpools to stop them.

TREES: This option has two good uses – it gives you more energy from any of your buildings on the same screen as the trees, and it's great for destroying large amounts of enemy land. Plant three sets of trees on one screen, then move the screen you're viewing and repeat the process. When you feel you've planted enough, set fire to them. This also ignites anything next to a



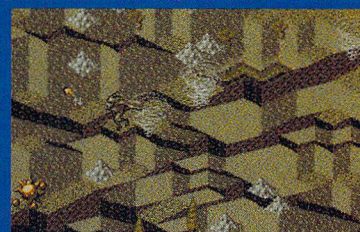
● Territorial disputes should ideally be resolved by referring to your local ombudsman. Hitting the plaintiff until he disappears with a small "aah" or until he flies straight up into the air is not recommended, unless you're sure you can get away with it.

tree, thereby destroying large proportions of the opposition. Don't leave the trees for too long though, since the enemy is gaining energy from them while they're alive.

VOLCANO: Probably the best effect since it permanently destroys land. The best use is on collections of large buildings or centred on the enemy leader, since it makes it difficult for his men to reach the Papal Magnet. The only way to make destroyed land useable is to use the Renew Land option.

WALLS: If used correctly, walls can be an extremely powerful tool. They can be used to confine enemies but still allow access to your own men. Look out though – since you can't trap Hercules or any other knight of a particularly strong type. When using walls, you have to note that, although you can use walls on the same screen as your settlements, you can't use them on settled enemy land. Also a section of wall has to touch other sections directly or indirectly.

WHIRLPOOLS: Although these can be useful for preventing the opposition reaching



● As a result of the nuclear fall-out, interesting mutations may sometimes occur. The chances are that they're in a state of shock, so please try not to frighten them in any way. The results are, at best, a tad unpleasant and, at worst, unbelievable.

their Papal Magnet, it's better to use Whirlwinds whenever possible.

WHIRLWIND: When used close to a coastline, Whirlwinds can destroy large amounts of coastal land, since they can start loads of Whirlpools.

GENERAL HINTS

If you're unable to raise land, then use Batholiths (when available) to make some new land. Don't use your ST to assist you since this is next to useless! If this restriction also applies to the enemy, then use Whirlpools to remove his land. Any effect is useful, but look out for when you later want to move in for the kill, since any effects left hanging around affect your men.

If you can't lower land, use of a well-placed Whirlwind or Whirlpool can reduce the ground. Once again, use any effects to destroy enemy land if they're suffering from restriction – but watch out for when you want to move in later on.

If you can neither raise nor lower land,

simply use your Papal Magnet to centre on the enemy targets. At the start of the game, both sides have a large and hefty population and consequently have quite a bit of energy available to them. Use this to carry out mass destruction (using, for example, Storm or Fire Rain) on the enemy's population.

If your people are spread out to begin with, then try and get them together. This makes it easier to elect a strong leader and protect your clan. However, if your population is mixed up with that of the enemy, use the Fight and Settle option.

When playing on hostile land environments, make sure that you choose a strong house for breeding. If it's a little on the weak side, the person dies, stopping you from reaching any free space.

When the restrictions are in your favour, switch game control to Computer vs Computer, since this deals with the boring raising and lowering of land to begin with. Reducing the screen helps to speed things up a bit. When you've got a decent-sized population, take control.

LITTLE EXTRA HINTS

For those of you with crap experience, try this password: FJECVTSUNTGVAVZV.

Another wee trick. Start the Conquest worlds, click on the World icon, click on Custom, then on the Game options. Change any options, then click on OK. Click on Evil, then on Two Players, and finally on Cancel. The enemy won't then be able to raise or lower land. Jim Street of Queensland in Australia is the man you have to thank for that snippet.

Also, to obtain the maximum experience in all the elements, try swapping the third and fourth letters in your experience code. This is not guaranteed to work.



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→ ARKANOID 2 - REVENGE OF DOH

IMAGINE

Doh. Doh. Such a lovely word. Doh. Anyway, here's a cheat. Type IMAGINE with the Caps Lock key held down while loading. When the game's in the intro, type PETEJOHNSONWANTSHEAT (all one word). Pressing <S> then enables you skips a level.

BLUES BROTHERS

TITUS

For infinite lives, all you have to do is type HOULA then press the Spacebar on the screen where you choose between Jake and Elwood.

DEFENDER 2

ARC

Type GOATY if you want to make yourself invincible. Croeso!

GODS

MINDSCAPE

Graham Haw of Tyne and Wear has written in to correct me on the reply to Matthew Hegeghan last issue regarding a cheat for Gods. Apparently there is one: type SORCERY on the password screen for infinite lives. Apologies all round, except to Graham for being such a smartass.

KWIK SNAX

CODEMASTERS

Once you've completed one of the levels, on the next level after starting press <Esc>. You start again but with all your lives, and the level you've just

completed stays completed. Also, if you have completed a level and you've just died, in the few moments when you're dazed, press <Esc> and you start again, but with the previous levels staying completed.

Ta very much to Richard Jelliss of Worthing.

LOMBARD RAC RALLY

MANDARIN

John Knight of Norfolk says that when you've chosen a race to compete in, pressing <Esc> at any time takes you to the next stage. It is therefore possible to win every race and also the full rally.

NEW ZEALAND STORY

OCEAN

Warp gate on Level 1.4 - shock! Takes you to Level 2.4 - horror! But you need to go through the gate on Level 1.1 - first alarm! On Level 1.1, on the top platform just before the birdcage, shoot at the highest point on the left wall and a gate appears to take you to Level 1.4.

On this level, swim right to some ledges and keep jumping up until you get to the letters "n" and "d." Collect them, and, staying where you are, shoot left until the gate appears. This gate takes you to Level 2.4.

James Kent of Devon says so, so it must be true.

ROBOCOD 2

MILLENNIUM

For anyone who hasn't guessed by now, here's the cheat Neil hinted at in his review of this game. Collect the following objects in order at the start of the

RAILROAD TYCOON

MICROPROSE

Adam Stevens of South Devon has come up with a way of cheating in this fine game. Warning: It involves copying files from the games disks! If you mess them up while using this tip, it's not our fault!

Copy Disk B to a blank disk. On this disk (the copy, not the original) delete the files ELOCOS.DTA and CLOCOS.DTA. Next, you need to load a word processor and save two files of size 0 bytes. In other words, don't type anything, just save a file called ELOCOS.DTA to the copied disk and then another called CLOCOS.DTA. Look at this disk - both files should be 0 bytes long.

Now load Tycoon but use your copied Disk B instead of the original. Play in Europe or England and you should immediately have a F-Series Diesel to use on your railroad. It costs £19,200,000, but you can get some extra cash by going to the Regional Display and pressing <Shift> 4. The trains should pay for themselves in eight years.

Now that's how to ruin a good game.



● It's compo-in-a-caption time once again. If you can come up with an amusing anagram of the words "railroad tycoon," stick it attractively on a postcard and wangle it into Amusing Anagrams Are My Forte, Actually, ST FORMAT, 30 Monmouth Street, Bath, Avon BA1 2BW by Wednesday 1 July. The amusingest entry (in the opinion of - er, me) gets a copy of the game, plus Formula One Grand Prix - see our review on page 74.

game: cake, hammer, earth, apple and tap. Note the first letters spell out CHEAT. You're then conveniently invincible for ten minutes.

RUBICON

21ST CENTURY ENTERTAINMENT

For infinite lives, pause and press the asterisk. Thanks to Alec Bell of Staffs for that.

TEST DRIVE 2

ACCOLADE

Type GAS at any time during the game to be taken to the next petrol station.

TURRICAN

KIXX

When you get a high score, type BLUESMOBIL to get infinite everything. From Scott Rimmer of Lancashire.

TURRICAN 2

RAINBOW ARTS

Start the game and jump up and then to the left. Climb up the hill and jump again. Press the Spacebar and launch a Wall of Death. A block appears - you should then jump into it and a shower of weapons appears. Thanks to Dan Chuthy of Bath.

VIZ

VIRGIN

Type in WHAT A LARGE SET OF BOLLOCKS on the character selection screen and you should then hear a funny noise. Hit a number between 1 and 5 on the keyboard and you're instantly taken to the corresponding level.

WWF WRESTLE MANIA

OCEAN

During a match, pause the game and then type in the password HULKHOGAN-WEARSTIGHTYELLOWKNICKERS. Whatever else you do, the fight finishes with you as the winner. Thanks again to Alec Bell of Staffs.

ELF

OCEAN

Jonathan White of Bolton has discovered something interesting about this game - hidden rooms secreted behind clouds. The secret room in the first level is at the very end in the small section just before the spider. Go up the ladder from the shop and get onto the top platform. Jump off onto the top cloud, which should be solid. Press the up cursor to enter the room, collect all the bonuses and then enter the Tardis (as in the Tardis) to return to the screen you left.

On Level Two, the room is harder to find. Go all the way across to the right - past the ball-bouncing gargoyles - until you come to a room with a ladder up, a ladder down and two "kennels." Go up the ladder, then go left. Go up the ladders again, left again and finally up one more set of ladders. You should now be in a room with two clouds and some ladders up the top of which you can't reach. The cloud nearest you is the one with the door in it. There may be secret rooms on the other levels, but Jonathan can't find them. Can anyone else?



● You're all right as long as you have your Elf. (Thanks Viz.)

SHADOWLANDS

DOMARK

LEVEL SIX:

In this level there are plenty of keys and switches which open doors anywhere in the level. Look at the diagram and key below to clarify what does what.

With regards to food, water, potions, equipment and any creatures, the same rules apply as on the previous level – too bad if you don't have a copy of last month's *ST FORMAT* – but we do provide this handy back issue service... see page 64.

KEY

Switch A opens door B

Key C, which can be found in the chest, opens door D.

Once through door D throw fireballs down the corridor until key E appears.

Key E opens lock F.

In order to collect key G, use the switch combination 2-4-3-1 (in quick succession) to gain access to the room.

Key G opens lock H.

Collect key J, which opens lock K. You need an empty chest to solve "I am 1, act like 6."

Exit level via teleporter T.

LEVEL SEVEN: THE MAZE

You need the map of the maze if you're going to manage this one!

KEY

Switch C opens wall Z.

Key A opens door Y.

Key B opens door X.

Lock W is opened by the key at the end of the Egyptian.

Collect both keys A and B, open the wall with switch C and go through Exit One to Level Eight.

LEVEL EIGHT: THE EGYPTIAN LEVEL

First, have a look at the diagram on the opposite page, labelled Level Eight – Egyptian. Throw three coins at the fountain (or urn) at the end of the long corridor (past the sarcophagi). Come back to the double doors near the entrance and press the secret switch near them. Now press the next secret switch in order to enter the Zodiac Room. To get the key, you need to place two men on each pressure pad in the following order:

And we continue our progression ever onwards. We now get on with our solution of *Shadowlands* which we began last issue with Levels One to Five. This month: Levels Six to Ten, with no stopping in between

1. Capricorn

2. Aquarius

3. Pisces

4. Aries

5. Taurus

6. Gemini

– that is, the order they are in the Zodiac sequence.

NB: Your key collector can walk one step further each time a switch is activated without getting teleported.

Collect the key and go through the double doors. In order to solve the "Sacrifice Puzzle," stand one figure with no items at the end of the passage. Now take a second character and throw a fireball at him. The fireball explodes inside the altar and the doors open. Exit through these doors.

Now fireball into the teleporter created by the secret switch "Send an appropriate sacrifice." But be careful! If you mistime the fireball, it reappears behind you!

Walk the characters carefully around the pits (the switches do nothing), and push the secret switch in the alcove at the end of the passage (with snake and torch). Now enter the shop. Don't buy the third item!

Exit the passage.

"Read the hieroglyphics" – light all the decorated walls by walking around them. Eventually the keys you require appear. All

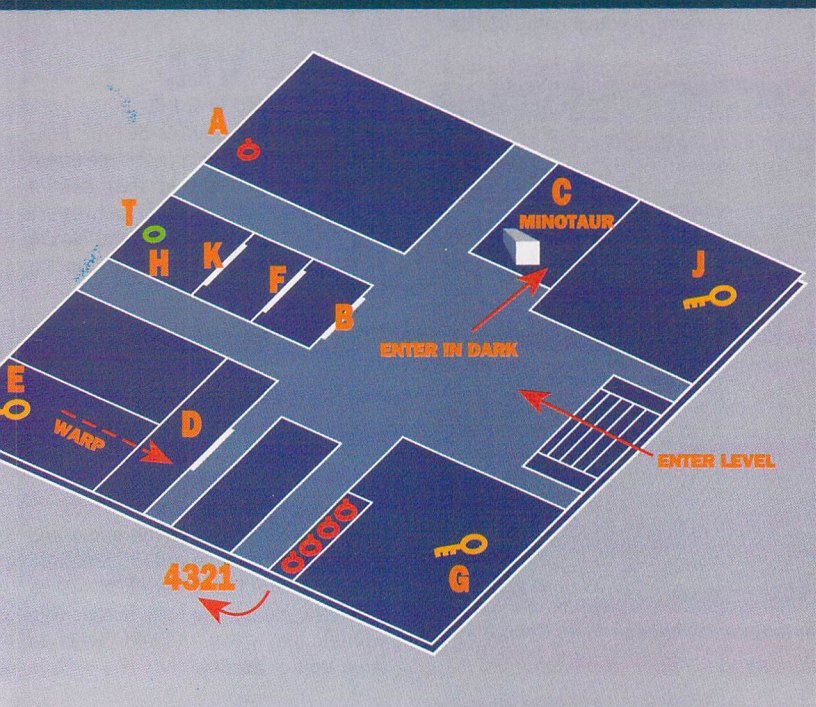
four keys must be collected in order to open the next series of rooms. "Send me your champion" – operate the three switches and send your best fighter through the door. Leave all his items behind ("Travel light") and walk him over the switch. He teleports beyond the Axe. Now press the secret switch, enter the room and kill the minotaur using the torch. Collect the chest which contains two keys. One lets you out. Kill the other minotaur also with a torch. Put the two spare keys in the two locks by the steps. This creates a teleporter back in the "Send me your champion" room. Now reunite your characters via the teleporter, collect the chest in the secret room beyond the steps. Go down the steps to Level Nine.

LEVEL NINE

Have a look at the page opposite, then down a bit for a handy diagram. Use the chessboard to copy the switch pattern and lead your men in formation in order to operate the four switches simultaneously. Throw a lit torch down into the pits to operate the next doors ("Light falls"). Now extinguish both torches in order to open the next doors. Fireball into the rightmost teleporter to close the pit and open the wall. Go around to "Fire Straight." Fireball straight over the pits. Eventually two teleporters appear. Go into them and then warp over the pits.

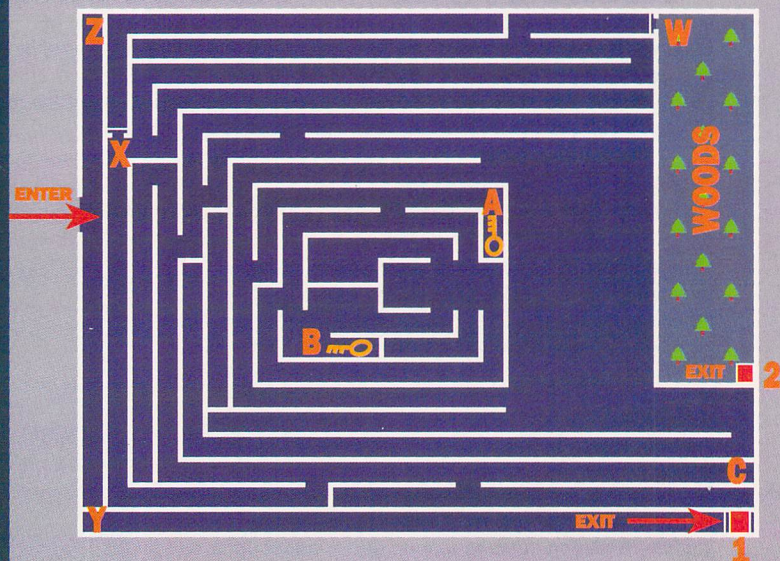
THE LEVELS

LEVEL SIX



LEVEL SEVEN – THE MAZE

NB: THE MAP IS NOT TO SCALE



KEY

Read sign X. It teleports you.

Try and read all the signs you encounter because they can move you around: X to Y to Z to A to B to C.

Key K opens lock L.

Key G opens door M.

* --> teleport out and go around again to H.

Exit through E to Level Ten.

LEVEL TEN

Take a gander at that map just over there on the top right hand side of this page to get your bearings.

KEY

Pull switch A.

Push secret switch B. This opens walls C and D.

Open and go through door D. Stand in corner E. This opens walls F and G.

In order to solve puzzle H: switch -> teleporter -> fireball. This opens the door J. Go in and collect the chest, which contains key K.

Use key K to open either locks L or M.

In order to open locks P or Q, collect the other key (key R or S).

Open the door. If you go via P you need 2.5kg weight, if you go via Q you need three gold coins, but no more!

Kill the two Anubises, collect the key and exit into Level Eleven.

LEVEL ELEVEN: THE GATEWAY

See the diagram down and over a bit. Use all the gateway keys you've collected.

Go from room to room... until you get to the final teleporter. Once there, collect the woodland key and enter the teleporter. You reappear in the Maze (Level Seven). Open the woodland door, find the steps and descend into...

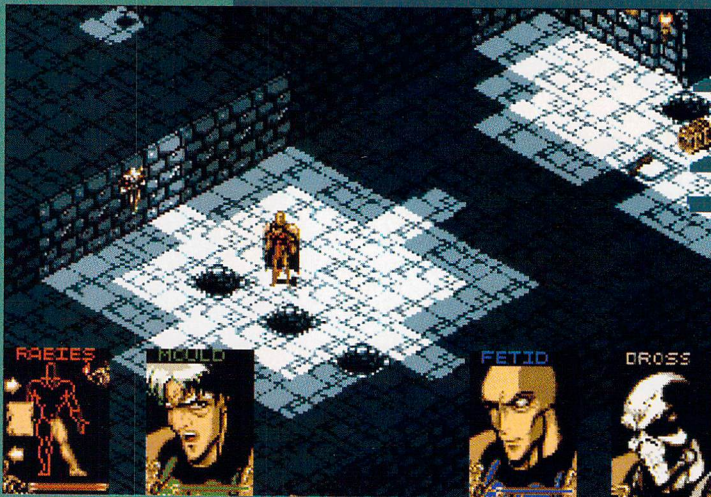
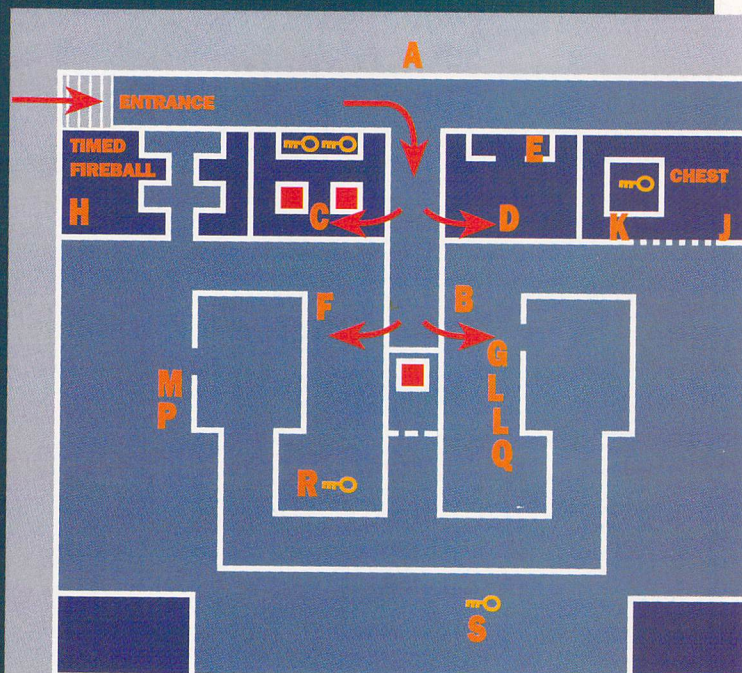
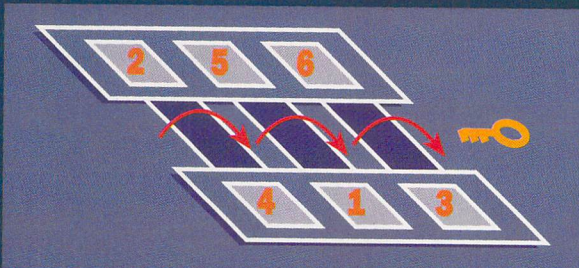
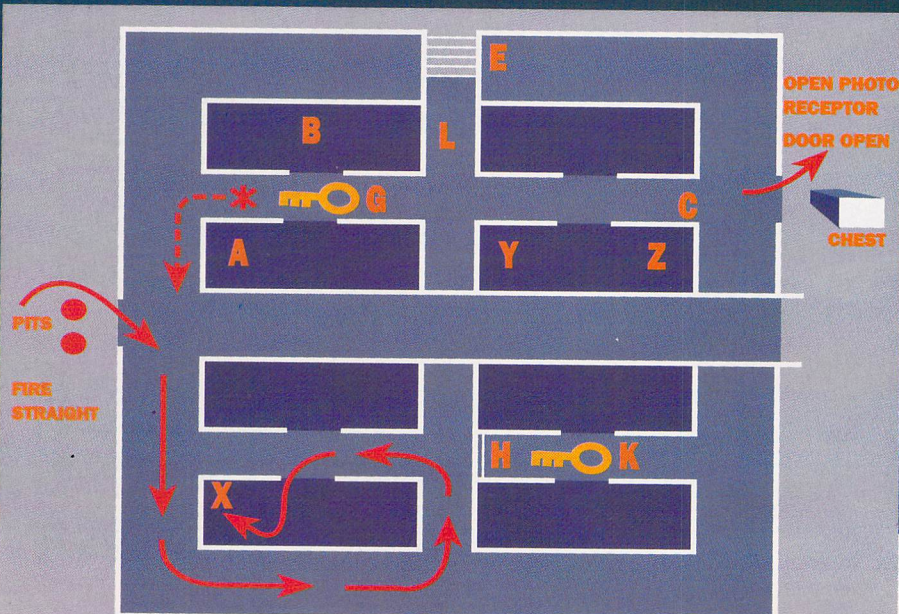
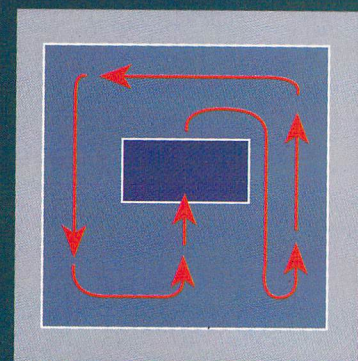
LEVEL TWELVE: THE CAVE

Exit this level via the teleporter and reappear on...

LEVEL THIRTEEN: THE TEMPLE

Find and kill the Overlord (the cloaked figure), collect his key and use this to get into the temple room.

Congratulations - that's it. Five minutes' work at the very most. Don't know what all the fuss is about.

**LEVEL TEN****LEVEL EIGHT - EGYPTIAN****LEVEL NINE****LEVEL ELEVEN - GATEWAY**

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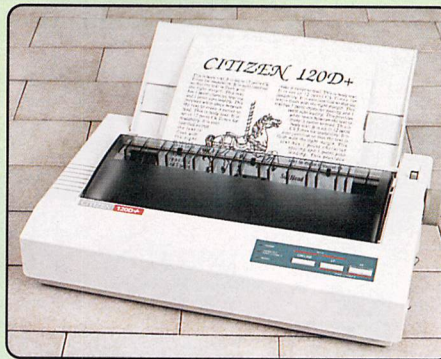
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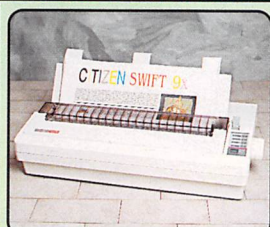
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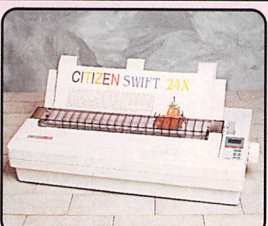


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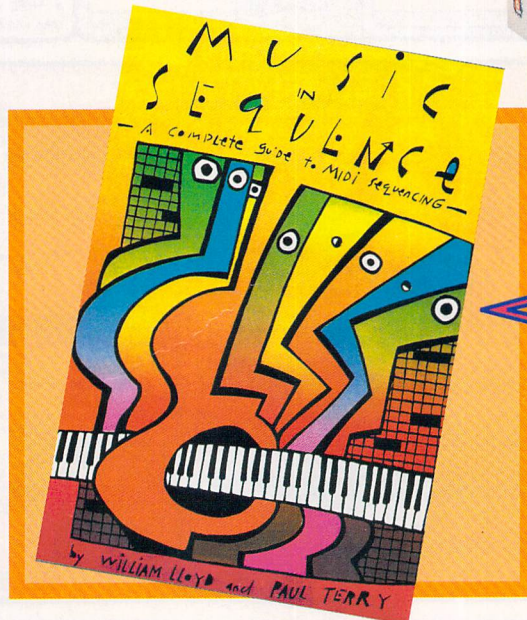
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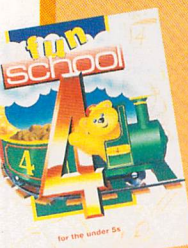
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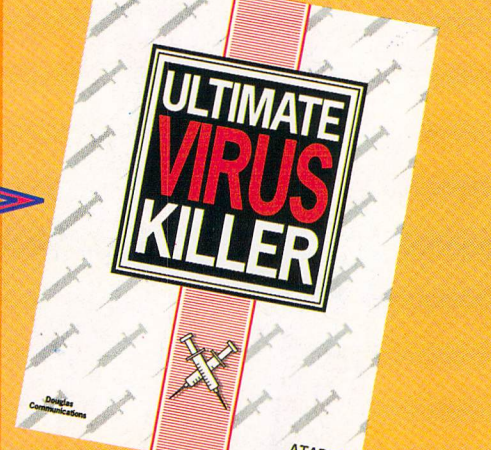
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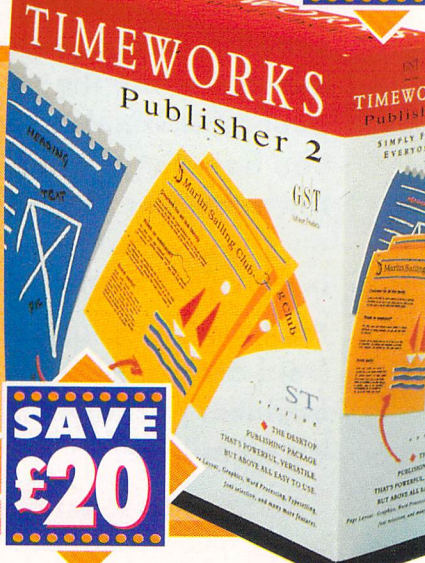
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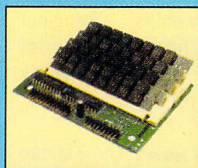
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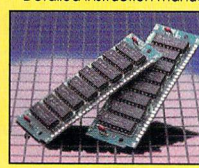
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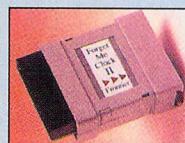


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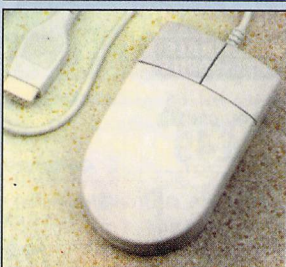
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Whatever happened to...?



● The Milky Bars are on him. But then that's his business – keep shtum.

THE BITMAP KID

Last appeared in Renegade's *Magic Pockets*, STF 27, rated 90%.

Description: Short, fairly pudgy. Wears a baseball cap and occasionally shades. Age indeterminate but probably around 12 or 13.

Previous appearances: Began life on a sleazy Saturday morning show for kids, *Motormouth*. This "comedy" program – presented by sundry RADA drop-outs desperate for the cash – featured a short section each week where an embryonic platform game called *Magic Pockets* would strut its stuff. Hapless adolescents unknowingly gave the world its first glimpse of the Bitmap Kid as he spun, leapt and waddled around inside his pockets.

His big break came when one of the Bitmap Brothers accidentally spotted him – the Brother was trying to win a bet that he could be up before midday that Saturday. Amazed by the Kid and the startling coincidence of their similar names, the Bros

snapped him up and he subsequently starred in a revamped version of *Pockets* on the ST, published by the Bitmaps' label Renegade.

History: After the phenomenal success of *Magic Pockets*, fame went to Bitmap's head. He determined to move to America and sign to Disney. At one point *The Bitmap Story* – mooted to be the most expensive animated feature ever made – was in the offing. Sadly, after a brief and sordid period in which his name was romantically linked with



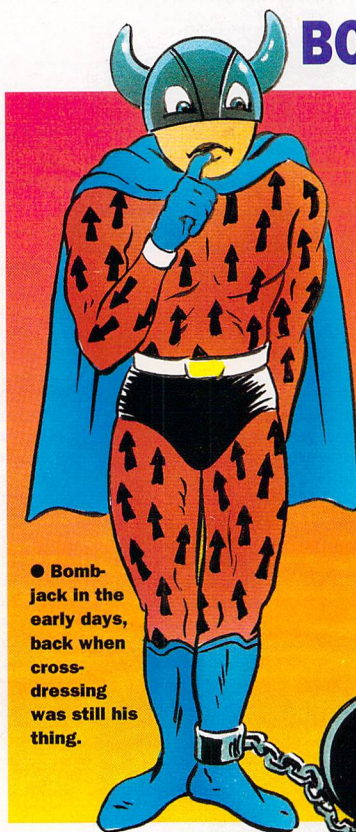
● Note the artfully-arranged cap and shades. The Kid in his heyday: not a hair out of place.

Betty Boo's – "It's nothing more than a working relationship," he said at the time – he hit the bottle in a big way. Disney called off.

Concerned showbiz friends – among them Dizzy and Miner Willy, who was no stranger to the sauce himself – persuaded the Kid to check into the Reed Institute for Pixellated Non-Entities. Three months' drying-out later, the Kid is now clean again, although it will take a long time for his tarnished image to recover.

What is he doing now? The Kid can once again be seen on Saturday morning TV, for three minutes at 15 minute intervals. He's the new Milky Bar Kid.

Future plans? Although the Kid is still keen on the idea of getting into movies, it's unlikely any major studio will now take him on. Even Renegade are wary of working with him again. It's almost certain that, unless he can come up with some way of proving he's back on form, the Kid isn't going to be seen on the ST screen again.



● Bombjack in the early days, back when cross-dressing was still his thing.

BOMBjack

Last appeared in Elite's *Mighty Bombjack*, STF 21, rated 48%.

Description: Short. Wears a red body-suit, a blue mask and a blue cape. Tends to jump about a lot.

Previous appearances: Bombjack was first spotted haunting the arcades. A tendency to jump on bombs and wear eye-catching suits soon got him noticed among the cult element, and it was decided he should appear in an ST game. After lengthy negotiations, BJ persuaded Elite to call the game *Mighty Bombjack*. Clearly, the seeds of his megalomania were already sown.

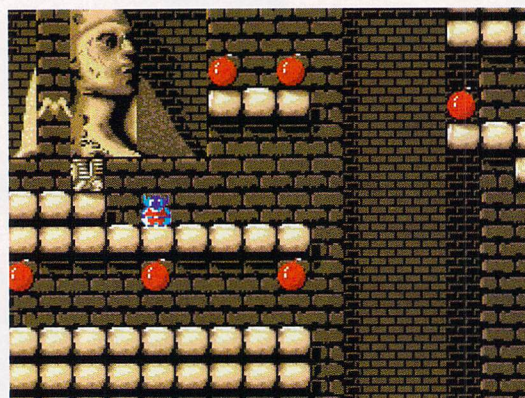
History: Bombjack soon became bored of jacking bombs. He was only doing it as a temporary job anyway, having been kicked out of the Bomb Disposal Unit (Special Costume Division) for being too weird. He later formed his own corporation, Weapons Inc, which spe-

cialised in supplying dubious gun-freaks with hard-to-find and antique weaponry from around the world.

But 'Jack was restless. A brief and somewhat accidental stint in the Salvation Army – he joined after hearing their paper was called *The War Cry* – was followed by a disastrous attempt at pop stardom. *Cold Grey Steel* was BJ's first and only single. Despite the attractive video and catchy lyrics ("We don't want love/We don't want money/We just want to feeel that cold, grey, steeeeeel") it was a massive flop and put BJ into heavy debt. This led to the notorious bank job attempt of '91.

What is he doing now? Time.

Future plans? "I never want to work



● The sets for *Bombjack* were the most expensive since those in the great *Outrun* fiasco. What a waste.

in games again," 'Jack told STF from his cell somewhere in Broadmoor. "I'd rather forget that period of my life." He did reveal to us, though, that he has dreams of starting a nationwide Gun Club, with free membership for the under-12s "to catch them young." Members would receive a monthly newsletter and discounts on selected makes of ammunition.

"You want fame? You gotta sweat," said that unpleasant woman at the beginning of *Fame*. But when the sweating's over... when the lights are dimmed... when the greasepaint has dried... what then? Ed Ricketts just wishes he was famous in the first place

David Bowie's question "Fame, what's your name?" is a bit odd, really. Nevertheless, fame is a fleeting beast. One minute you're, well, famous, and the next... you're not. When the game's over, what happens to those game heroes that disport themselves tirelessly on your screen? Who knows? Well, we do. Here we chart the troubled history of five ST game heroes, and let you in on what they do when they're not starring in the latest game. You may be shocked and amazed at the seedy world of the game hero...

CHUCK ROCK

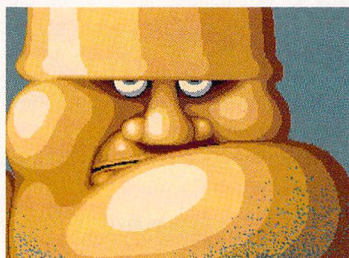
Last appeared in Core Design's *Chuck Rock*, STF 23, rated 82%.

Description: Short. Very little hair. Large belly. Leaves knuckle-marks on the ground.

Previous Appearances:

"The Rock" first popped up in the ST game *Chuck Rock*, a convincing and challenging look at life during the Palaeolithic period of history. At the time scholars threw doubt on the authenticity of the use of crocodiles as see-saws (as featured in the game), or, indeed, the co-existence of dinosaurs and primitive man. However, game-players pointed out that it was, in fact, a platform game and suggested that perhaps the scholars should go away and - er, abuse themselves. At which point a big fight broke out.

History: After his appearance in the



● The cover of Chuck's third "difficult" album, just gone platinum.

ST game, many people believed Chuck to be a genuine Stone Age man. However, one astute gameplayer noticed that in one very-hard-to-reach scene on Level 211, Chuck is, in fact, wearing a digital watch. Suspicious, the gameplayer won a court battle to get Chuck carbon-dated. And so the truth was revealed: the tests showed Chuck actually dates not, as previously believed, from two and a half million years ago, but from somewhere around 1964. Like the Pitdown Man, Chuck Rock was a big hoax.

Contrary, however, to what might be expected, this didn't harm Chuck's

career at all. In fact, the ensuing publicity gave him a new lease of public life. His catchphrase, "You can't hit that and eat it," became *de rigueur* for every schoolkid to quote. He took over from Wogan three times in a row when Wogan was "on holiday."

What is he doing now? Rock has formed an avant-garde grunge rock band, Pigment, who rely heavily on Chuck's fake past. Their stage show outdoes even Spinal Tap's, and numbers like "Cave In," "Dinosaur Meat" and the eponymous "Chuck Rock" inspire frenzied "chucking" throughout the audience. "Chucking" involves hitting the person nearest to you. And then hitting him again. And again.

Future plans: To record an album of Dollar covers using only a bass guitar, a sitar, two trumpets and a stylophone. First, though, he's appearing in *Chuck Rock 2*, again from Core Design, sometime in October. But, of course, this time no-one will be fooled by the prehistoric setting, will you?

GUYBRUSH THREEPWOOD

Last appeared in Lucasfilm/US Gold's *The Secret of Monkey Island*, STF 23, rated 94%.

Description: Short. Wavy hair, big shirt, embarrassing trousers. Looks like a flooring inspector.

Previous Appearances: Discovered the secret of Monkey Island via a complicated and slightly unbelievable series of events which were thoroughly documented in the ST game of the same name. It's too complicated to go into here - suffice it to say there were breath mints, a ghost pirate called LeChuck, vegetarian cannibals, a woman Governor, three piranha poodles, and immense quantities of memos and grog involved.

History: Threepwood was an unusual child. From an early age he showed an abnormal propensity for annoying people, usually by asking stupid questions at the wrong moment.

As soon as he was old enough, he took to wearing big flouncy shirts and

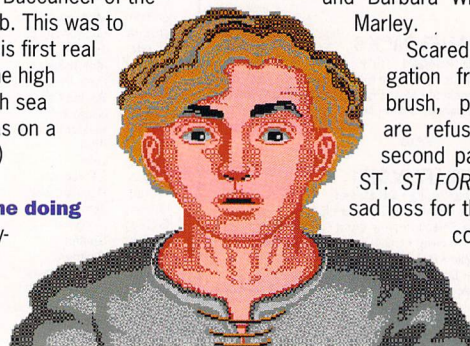
what can only be described as "pantaloon." Early attempts at piracy involved the construction of a fake ship in his back garden made entirely of lolly sticks. (The ones with the jokes on. The ingenious Threepwood designed the ship so that if you started at the top of the crow's nest and read down to the keel, you ended up with one huge joke with the punchline "She didn't have any to begin with!" This joke is now in the Smithsonian Institute.) Unfortunately, the ship was only three feet tall. Later on, Threepwood joined the Buccaneer of the Month Club. This was to give him his first real taste of the high seas. (High sea tasting was on a Thursday.)

What is he doing now? Guybrush is currently on the lecture

circuit promoting his book *Lemonhead: The Truth Behind The Fruit*.

Future plans? Threepwood is reputed to be furious with the ST version of his epic adventure, claiming that it makes him look short, stupid, arrogant, unadventurous and unable to cope with even the simplest situations. In reality, he says, he's "a good two inches taller." His ambition is to direct his own version of his life story as a musical, starring Steve Martin as Guybrush, with Jack Nicolson as LeChuck and Barbara Windsor as Governor Marley.

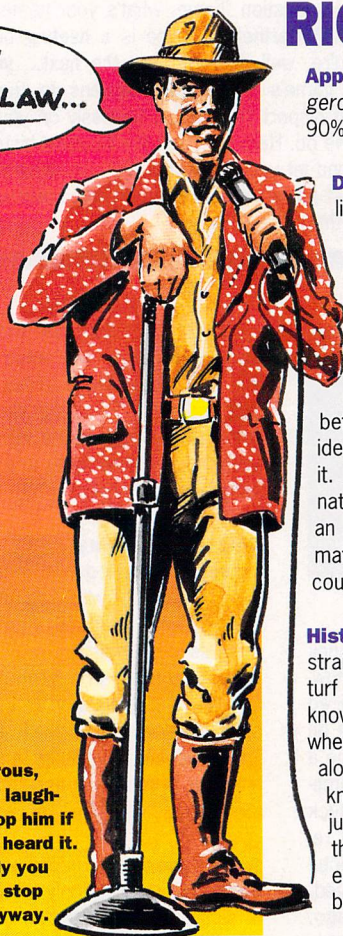
Scared by the threat of litigation from the irate Guybrush, publishers US Gold are refusing to convert the second part of his life to the ST. *ST FORMAT* feels this is a sad loss for the ST and would encourage every reader to write to USG immediately and tell them to pull their fingers out.



● Ask Chuck to play his 23-minute version of *Carnivore* and you're really in trouble.

● Guybrush - a man with a mission, a man with a silly hat.

TAKE MY
THER-IN-LAW...



● Rick Dangerous, man of laughter. Stop him if you've heard it. Actually you should stop him anyway.

RICK DANGEROUS

Appeared in Microprose's *Rick Dangerous 1* and 2, STF 34 and 15, rated 90% and 86% respectively.

Description: Short. Looks exactly like Indiana Jones, only with a gun instead of a whip.

Previous Appearances: Dangerous popped up twice on the ST in two eponymous games. He claims he had already written several games about his life "way before that bunch at Core had the idea. And what a hash they made of it. Mine were much better. Unfortunately, the games would only run on an Oric 48K, and only me and my mate Andrew bought one of those. I could've been rich, though."

History: Skipped childhood and went straight into his teens. Began life as a turf accountant because he didn't know what it meant. Disappointed when he found out it didn't involve cataloguing sods, divots and grassy knolls, he soon moved into loss adjusting. But he was unsatisfied with this, too: the losses he adjusted ended up worse than they had been before.

Became interested in hats and

guns. With money he'd gained from some wrongly-adjusted losses, he set up his own Hat 'n' Gun Emporium with a special mix 'n' match section (any two hats for each gun). The business failed miserably.

Then came a period in which Dangerous claims "all the exciting bits happened" and which are featured in the games. Friends (well, his mate Andrew) report: "At that time, his hat mania become worse. He'd wear two or three at a time and run around with a toy pistol, shouting things about hidden gold and Incas." But none of them actually remember him ever doing anything truly daring.

What is he doing now?

Mr Dangerous is at pains to point out that he was, in fact, doing his "rugged adventurer with hat" routine long before Indiana Jones came along. "Jones ruined me," he told us. "I'd worked long and hard on this image and was just about to break into the big time when

wham! — along come Spielberg and Lucas and virtually put me out of business."

It has to be said it's a pathetic sight to see the once fine figure of a game hero desperately trying to eke a few laughs from a drunken Northern audience in a seedy nightclub. This, then, is what Dangerous has been reduced to, the daring exploits that characterised his life nothing more now than a barely humorous routine.

Future Plans: To go home, have a shower and go to bed.



● Rick "The Hat" Dangerous attempts to get past Freddy "The Gate" Gate (not in this picture).

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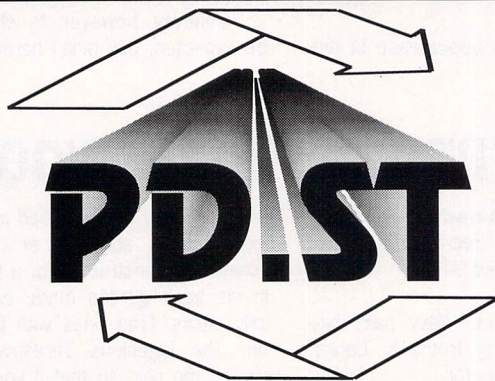
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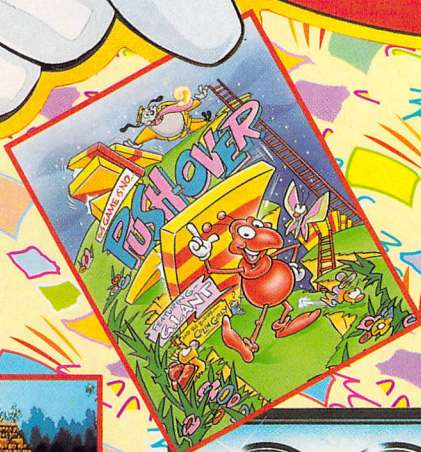
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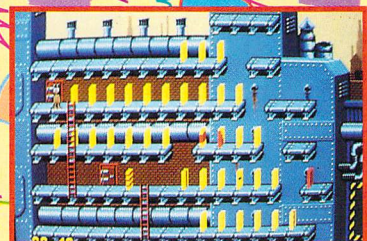
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YODA YODA YODEL?

Callum

McFetridge of Lanarkshire in Scotland has won himself this month's prize for his rendering of Yoda. Here's how he did it, using *Deluxe Paint*...



● *Deluxe Paint* is from Electronic Arts ☎ 0753 549442 - it costs £59.99.



1 "I selected a large brush and roughly sketched in the outline and the main facial features. I also marked in the heavily-shadowed areas. This ensures the proportions are okay before getting too far into the drawing and having to do major alterations."



2 This bit is very time consuming, but it makes colouring simpler. I worked my way around the rough outline using Magnify (switching between x2 and x4) and tidied up all the lines as well as adding the fine detail. I regularly stepped back from the screen to look for any proportional errors developing. I was then left with a black and white image of my final drawing."

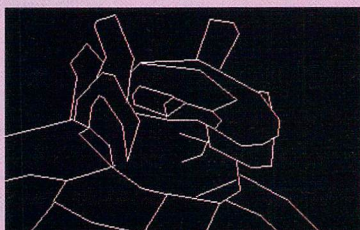


3 Before I started colouring, I chose my palette. It's very important to get it just right or things get difficult when it comes to shading. I left four colours out for later use. I changed the background colour making it darker, cutting down on screen glare. I started colouring in x4 magnification, carefully blending the shades together. Stippling would be useless in a drawing like this."

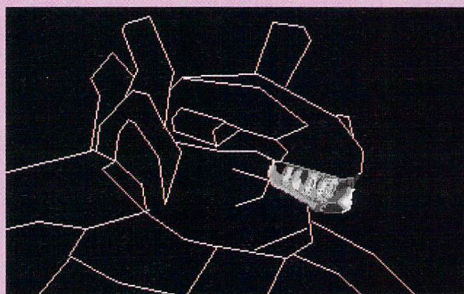
ALIEN 2

Neochrome is Stuart Mathie's choice of art package. Incredibly, he also comes from Lanarkshire in Scotland. He got his inspiration from the film *Aliens*.

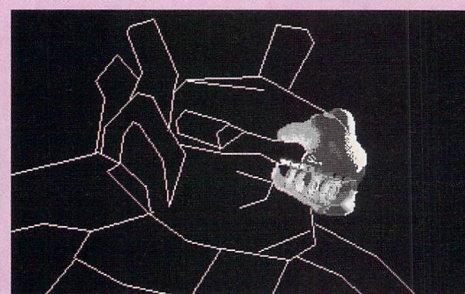
● *Neochrome* is available from Goodman Enterprises at £5.95 ☎ 0782 335650.



1 "The first stage was to select a palette: plenty of greys and very light colours to make the alien look slimy. I then drew the frame, using the Line Draw function."



2 I thought it was important to start from a clear part of the picture, so I chose the jaw. It took a lot of trial and error to get a good colour contrast, but I was quite pleased with the end result."

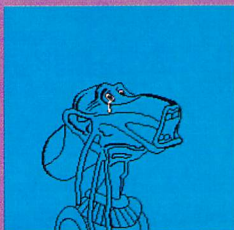


3 This stage was really just experimental, trying to find the best lighting effect. I filled the area with pure white, and used the airbrush to blend it in with yellows and pink."

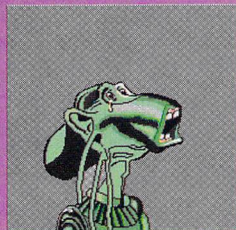
ALIEN, TOO

Here's another drawing from the comic *2000AD*, once again from the character Judge Dredd. **Colin Thomson** of

Glasgow is the bloke who did this one with *Deluxe Paint*.



1 "I like to begin my drawing with an outline. Here I used Line Draw to give me well drawn lines and curves. Using the Magnify tool, I zoomed into the picture for the smaller detail, like the eyes and so on."



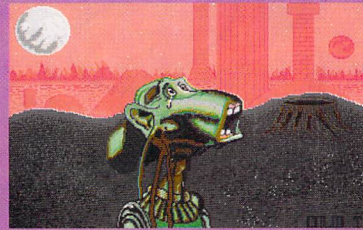
2 Next I put in the skin colour of the alien's body and also added more detail. Again, I used Magnify to zoom into the smaller detail."



3 I added more detail and colouring - particularly brown to help the shading effect."



4 For the background, I used the Line Draw tool to give me the bumpy effect. I selected an attractive sky colour from the palette and chose red to give an atmospheric look to the picture. I also placed a circle in the sky using the Circle tool to begin the planet. I added more detail to the alien."



5 I added even more detail to the picture. Selecting a darker red from the palette, I drew a *2000AD*-style city with the Line and Circle tools. I added more detail to the planet, with shades of grey, and smoothed it off with the FX tool. To draw the ground, I used the Airbrush tool, and Line Draw to draw in the crater and detail. The drawing took about four hours."

You know, we only want you for your pictures. So next time you knock up some pixels that vaguely resemble something even slightly artistic, do the following: (a) curse because you didn't save any intermediate stages. We only like pictures with intermediate stages here. (b) Go back and redraw the whole

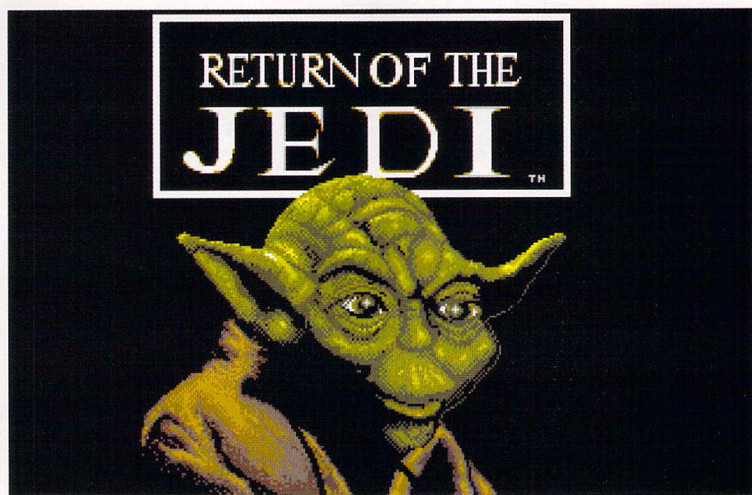
picture, saving intermediate stages on the way. (c) Decide it's not really good enough to send in, and leave it on your hard drive for three months. (d) Discover it later, send in all the stages with an explanation to Gallery, ST FORMAT, 30 Monmouth Street, Bath, Avon BA1 2BW, and collect your £25.00 prize. (Perhaps.) **stf**



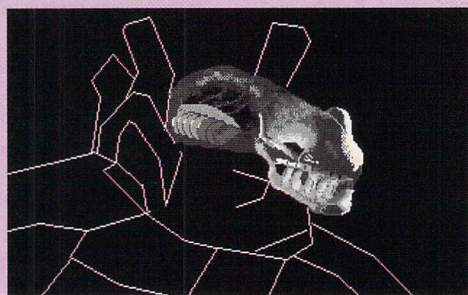
4 I continued colouring in the face, being careful not to blend things too smoothly and lose any detail and texture. When I'd finished that, I started on the body. I only had four colour slots left to use, so again I had to be careful when choosing the palette. The clothes have a rougher texture, so shading isn't as smooth.



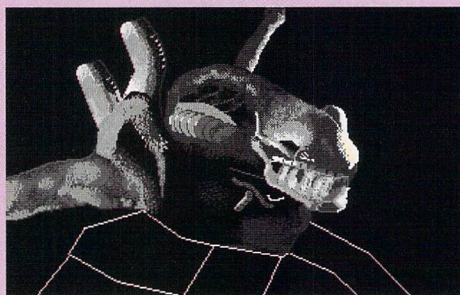
5 The alien's finally finished. I wanted to add some text, but I couldn't find a font that looked even remotely similar to the *Star Wars* text, so I completely remade an existing font on a separate screen. I used my colour palette to blend the text in with the background.



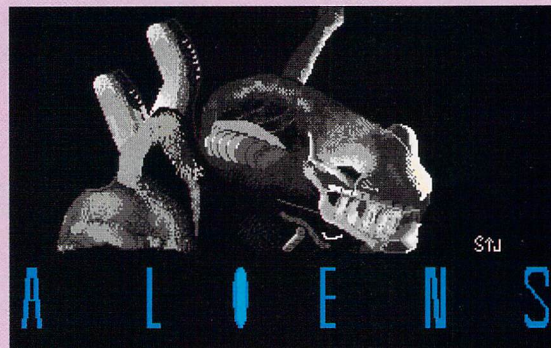
6 I made the border around the text, then cut and pasted it onto the correct position on a black screen. Then I cut out the Yoda drawing and pasted it on the foreground of the text. I left the background black because I didn't want anything to detract from the main image."



4 Using the same lighting technique, I filled in the rest of the head, blending with the Pencil and the smallest airbrush.



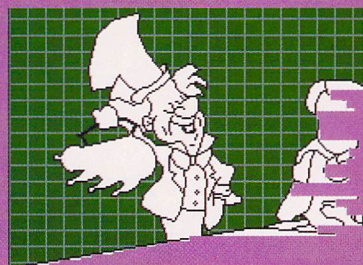
5 I filled in the rest of the body using the airbrush and pencil method, but now added light from both sides to give the creature a slimy look.



6 I fixed the alien's arm which I had never really been happy with, and scrapped the rest of the body to add in a title. Finally, I signed the picture."

TEA AT THE MAD HATTER'S

Andrew Gridale of Cheshire used *Deluxe Paint* for his pic of the Mad Hatter's tea party from the Disney original.



1 "First, I traced the picture. I drew a grid over it, then drew a grid in the same proportions. This grid helps when copying drawings. The Mad Hatter and Alice were all I needed to draw, because the rest of the pic fits in.



2 Here I put in the main blocks of colour. The palette was quite easy to choose because it's a cartoon and uses primary colours. I guessed that the hardest part of the picture would be Alice's face, so I put this in first - if I found I couldn't do that, I'd know it was pointless carrying on. I couldn't get it perfect, but it was the best I could do.



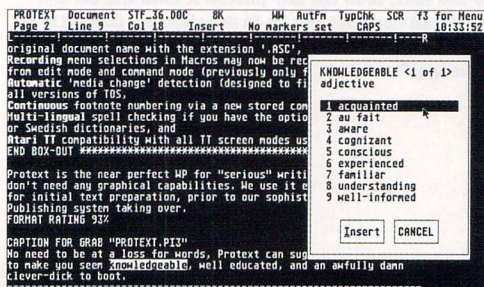
3 The table. Here I put the detail into the Hatter, Alice and everything on the table. For detail, I used magnification - seeing the whole picture is only any good for getting things in proportion. This took a long time because, apart from a few circles and lines, all the pixels were put in individually. This gives the final picture a more polished look.



4 The background was surprisingly easy, because there's nothing actually there - it's just a mass of green, yellow and blue blobs, so it was fun to draw. I used Line Draw for the curvy leaves because I find that Bezier curves aren't very effective for small curves. Using small lines gives a far smoother curve. I added some more things going on at the table to make the scene look as hectic as possible."

Red hot... or not

Yo, er, dude. It's the kickin'est, hottest 'views section anywhere comin' at ya. Or so we're inclined to believe



● No need to be at a loss for words! The latest version of Protex – along with its usual dazzling array of powerful functions – can suggest plenty of them to make you seem knowledgeable, well educated and an awfully damn clever dick to boot.

Professional writer

Protex v5.53

MACHINE: 1MByte STs, ALL RESOLUTIONS

PRICE: £152.75

FROM: ARNOR

CONTACT: 0733 68909



There are plenty of good word processors for the ST, from Public Domain offerings like *1st Word* to more recent, sophisticated programs like *Write On* (the complete package was yours with STF 33) and *Redacteur 3* (£119.00 The ST Club ☎ 0602 410241). But the all-British WP package *Protex* is rightly a popular choice among professional writers, and the latest update has just appeared.

Although most of the WPs for the ST now incorporate all sorts of graphical features – like the ability to import pictures, use fancy fonts and so on – *Protex* is almost puritanic in its absence of such frippery, and doesn't even utilize GEM windows! It is so popular despite this because it is not only extremely capable, reliable and fast, but is very powerful and absolutely packed with professional-standard features. The landmark v5 made it more ST-friendly by adding pull-down menus to its type-in command line interface, and v5.53 is the most recent "maintenance" release which tidies up a few loose ends.

The major new feature is the addition of a first class thesaurus, giving you access to a list of synonyms and alternatives for a selected word at a

simple keystroke command. The thesaurus can accept 43,000 entry words and suggest 827,000 alternatives, so there is never any need to repeat yourself!

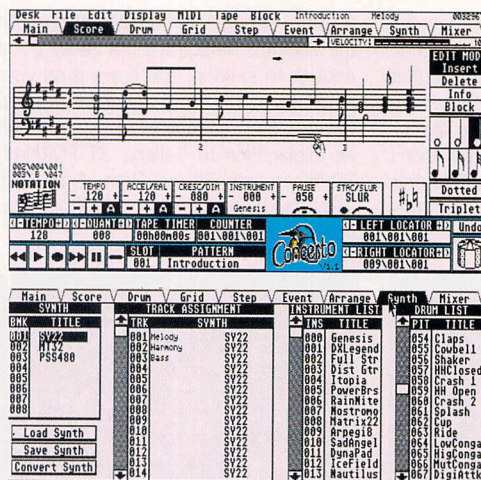
Other new features include:

- improvements to the spell-checking routine;
- you can use the standard ST file-selector or replacements for Save, ASCII Save, Name, Create New Document and Spool to File operations;
- automatic timed save in a temporary directory;
- menu selections may now be recorded in macros from edit mode as well as command mode;
- automatic "media change" detection (designed to fix a bug in all versions of TOS);
- continuous footnote numbering;
- multi-lingual spell checking if you have the optional French, German or Swedish dictionaries;
- full TT compatibility, with all TT screen modes useable.

Protex is the near-perfect WP for "serious" writing, so long as you don't need any graphical capabilities. We use it extensively at STF.

PETER CRUSH

STF RATING: 93%



● The score editor window of *Concerto*, where you can enter musical notes directly onto the staves. Other effects, such as individual note velocity and staccato, may be triggered from this screen.

● The synth editor enables you to customise the synth data banks to conform to your own instrument. Individual synth configurations may be loaded, saved and edited from here.

Top scorer

Concerto

MACHINE: ALL STs

PRICE: £39.95

FROM: MICRODEAL

CONTACT: 0726 68020

Concerto is a new music package for the ST which combines a 24-track MIDI sequencer with an easy-to-use score writing facility and STE, Mega STE and TT DMA sound sample control. The program looks complex when first loaded, but if you follow the well-laid-out manual it is easy to get to grips with the various options available.

In addition to the normal GEM drop-down menus, *Concerto* offers a "Card" based windowing system to switch between its ten main editing screens. Each card can be accessed from any screen, and different screens can be entered even while a song file is being played. The sequencer's tape machine controls are permanently displayed in the bottom fifth of the screen so that sequences can be played from any editing screen.

Another feature of the program is the ability to edit the synth setup to match your own machine. Different manufacturers' synths have the same instrument and drum sounds set to different numbers, but *Concerto* makes it a simple task to edit the setup and save it to disk as a synth bank. The program is supplied with pre-configured synth banks for the Yamaha SY22, the Roland MT32 and the Yamaha PSS-480, so you can use it immediately if you have any of these instruments.

Concerto offers a wealth of options enabling you to take fine control of your MIDI instruments and be truly creative with your musical output. An excellent easy-to-use package and a bargain at the price.

CLIVE PARKER

STF RATING: 87%

TEN IN ONE

Concerto's ten work screens (from left to right) offer the following features.

Main window – enables you to build up a complete song from pre-created patterns. Displays the track list and MIDI channel assignment and status.

Score Editor – here you can build up a song or pattern note by note, choosing tempo, notes, acceleration rate (you can increase and decrease the tempo within a song), instrument, volume and individual note velocity (volume).

Drum Machine – lays down the percussion track of your song on a drum grid.

Grid Editor – build up a song using a grid like the drum editor, using a keyboard display at the left of the screen. Useful for those who can't read music.

Step-Time editor – used to enter chords

into your song.

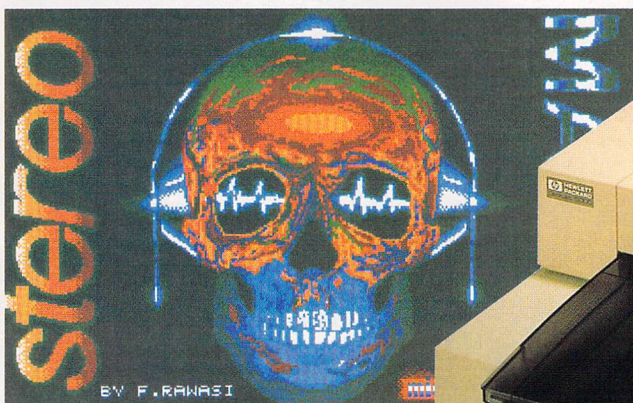
Event Editor – displays all music entered into *Concerto* as text. You can't edit individual events here but you can delete or change the order of events.

Arrange Window – 100 slots to build up a sequence of patterns in memory, with effects such as transposing of notes, ghosting of one track to another, transposing the velocity of a track, delay (for generating echo effects) and changing instruments.

Synth – edit the assignment of synth instruments and drum sounds, trigger DMA samples in memory and convert songs between different synths.

Mixer – like a mixing desk, gives you control of tempo, instruments, pitch bend, control changes (special functions for specific synths), staccato and slur and record mix. The last option records the song plus its mixer effects.

● The Deskjet 500C took just 19 minutes to print this image at 150 dpi from *PageStream 2* – not too bad, and the printer was nice and quiet. It's amazing how many shades of colour you can produce from just red, blue and yellow – everything except for true black! The 300dpi print didn't seem much more detailed but took much longer.



● Looks pretty much like a normal Deskjet printer, doesn't it? But take out the £15 black cartridge, slot in the £25 three-colour one, and bingo – it prints your graphics in glorious Technicolour! Shame you can't do that with an ordinary Deskjet!

So you've got y
Desktop Publish
those masterpie
achieve such "h

● With its black print-head cartridge installed, the Deskjet 500C behaves just like an ordinary Deskjet – refined, cultured and capable of printing out your text or graphics to a very high standard.



Colourful character

Deskjet 500C printer

MACHINE: ALL STs

PRICE: £880.00 (but you can find it for £560.00)

FROM: HEWLETT PACKARD

CONTACT: 0344 369369

Hewlett Packard claim to have sold a million of their Deskjet printers since the machine was launched in 1988. Although other manufacturers have brought out their own inkjet machines, for many ST owners HP is the only choice for reliability and software compatibility. Now there's a colour version as well.

The Deskjet 500C looks no different, but it comes with both the normal black ink cartridge and a special colour cartridge. This is a little larger than the black cartridge, and contains three colours of ink – yellow, cyan blue and red. With the black cartridge slotted in, the machine functions as a standard Deskjet 500 printer, and a 60-line test page printed in only 33 seconds in draft mode and a fast 40 seconds in letter quality mode.

Unfortunately, at the moment only one ST program can take advantage of the printer's colour capability – *Page-*

Stream 2, the desktop publishing package (£169.00 Soft-Logik ☎ 081 309 1111). Import a *Degas* picture into a *PageStream* document, print it at 150 dpi resolution, and 19 minutes later you get a printout of very good quality indeed – much better than any produced from a colour dot matrix printer, for

instance. We found some inexplicable coloured banding printed just outside the main area of the picture, but this might be a problem with the new printer driver and it did not spoil any of the image proper.

Trying to print at 300dpi, however, is interminably slow. The ST takes some six and a half minutes creating the image to send to the printer – understandable, considering how much data has to be processed with a colour picture. But the printer prints so slowly that after one hour (yes, 60 minutes!) all that had been completed in our test was the first two inch strip of the image. On that basis it would have taken almost another four hours to finish printing the picture! The printout is

more detailed, but not good enough to warrant the extra time involved.

The root of the problem must lie in the software driver, because HP claim that the Deskjet 500C connected to a PC-contemptible can print a colour image in only a few minutes. When the Canon Bubblejet printer was launched there were no ST printer drivers for it, but now no self-respecting ST software is without a Bubblejet driver. It is to be hoped that the same will happen with the Deskjet 500C. The "street price" of the colour Deskjet 500C is about £560, as compared to about £360 or so for a standard Deskjet, so the extra money might be worth considering for the colour capability.

PETER CRUSH

HEWLETT PACKARD DESKJET 500C

£880.00/ Hewlett Packard ☎ 0344 369369

FEATURES: 90%

All the advantages of a normal Deskjet when all you need is mono printing, plus the ability to slot in the alternative cartridge for good quality colour printouts.

SPEED: 79%

Very good in mono, slower in colour. This is probably not the printer's fault, and should improve markedly when ST programmers have had time to write good printer drivers.

EASE OF USE: 90%

Very easy to use, with nothing complicated to set up on the machine and good avail-

ability of mono printer drivers – but remember to switch on the Deskjet *before* the ST, or it won't work!

RESULTS: 87%

The three-colour printing head produces more vivid and more precise colours than any dot matrix colour printer, and using the black cartridge it's at least as good as the standard Deskjet.

THE COMPETITION:

Colour dot matrix printers are a league below, noisy and cannot produce such fine detail. Hewlett Packard's own Paintjet

printer (£1,169.00) is more expensive and works at a lower resolution.

STF RATING: 85%

Gives you proper 300dpi quality colour printing for a bit more than the price of a mono Deskjet. Once the software printer drivers are available, ST owners will be in for more colourful lives. As we go to press we hear that *Calamus SL DTP* (to be reviewed next issue) now includes a 500C printer driver, and Jeremy Hughes is hoping to produce one for *Imagecopy* (reviewed STF 33), so watch this space!

THOSE COLOURFUL TECHNICAL DETAILS

● **SIZE:** 438mm wide, 200mm high, 376mm deep. Weight 6.5 kg (just over 14 pounds).

● **POWER SUPPLY UNIT:** external transformer supplied complete with all leads and plugs.

● **FONTS:** Three built-in text fonts: Courier and Letter Gothic in a range of pitches, and CG Times in proportional

spacing. All are printable at either 6 or 12 points text height, and can be expanded, underlined, subscript / superscript, bold and italic.

● **MEDIA:** Handles paper or transparency film within the weight range 16 to 90 gsm in US Letter, US Legal and A4 sizes, and also envelopes in two standard sizes (US #10 and European DL). Built-in sheet

feeder holds up to 100 sheets.

● **GENERAL:** Responds to HP PCL level 3 commands, shared with other Deskjet models and the HP Laserjet 2, and therefore works with software supporting these (using its black cartridge).

● **POWER CONSUMPTION:** 8 watts of power at standby and a maximum of 25 watts while printing.

● Print speed of draft quality text (using the black cartridge) is the same as on the standard Deskjet 500 (240 characters per second), but letter quality text is printed a faster at 167 cps as opposed to 120 cps.

● The 500C's printer buffer is larger: 48K as opposed to 16K on the standard Deskjet 500.

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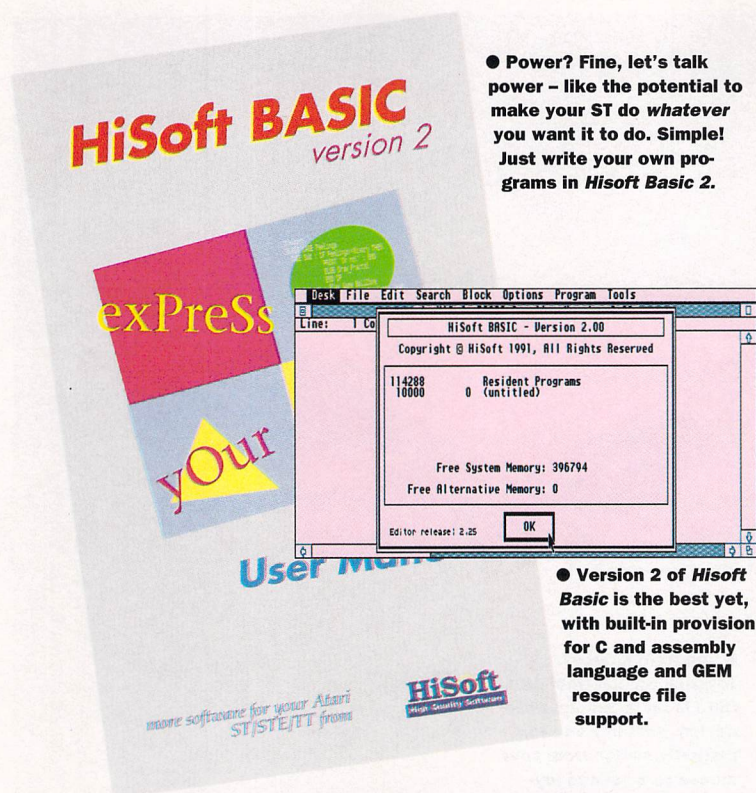
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E & OE



● Power? Fine, let's talk power – like the potential to make your ST do whatever you want it to do. Simple! Just write your own programs in *HiSoft Basic 2*.

● Version 2 of *HiSoft Basic* is the best yet, with built-in provision for C and assembly language and GEM resource file support.

--UVK Recognition Statistics--
1045 Different bootsectors
62 Bootsector viruses
32 Anti-viruses
5 Link viruses
4 Harmless file types
81 Special applications
-----UVK Repair Statistics-----
506 Different bootsectors

F1 OK
F2 Cancel
THU 07.05.1992 15:20:04

● Here is a rundown of *UVK's* vital statistics, which can be displayed from within the program. This latest version, 5.4, can detect 62 bootsector viruses and recognises well over 1,000 programs.

THE ULTIMATE VIRUS KILLER
Version 5.4GB
Written by Richard Karsmakers

Douglas Communications
P.O. Box 119
Stockport
Cheshire SK2 6HW
England

F1 Search'n'Destroy Viruses
F2 Repair Disks
F3 UVK 5.4 Information
F4 System Status
F5 Quit to Desktop

THU 07.05.1992 15:19:36

● All the functions of *UVK* are very easy to operate from its menu-driven system. There's also on-screen Help if needed – which is just as well, since the manual on disk is detailed and lengthy.

→ Improving the BASICs

HiSoft Basic 2

MACHINE: ALL STs

PRICE: £79.95

FROM: HISOFT

CONTACT: 0525 718181

The new version of *HiSoft Basic* comes on three disks and is supplied with two large chunky manuals. The program is easy to install onto a hard drive, can be configured for use with a RAMdisk, and is now fully compatible with all the new versions of TOS, from 1.62 on the STE through TOS 2.06 on the Mega STE and ST Book to TOS 3.00 on the TT machines.

There are plenty of keyboard shortcuts you can use to access most of the menu functions from the editor screen – very useful because many of the GEM menu options have sub-menus which pop up when selected. The main editing screen is very easy to use, being very similar to a word processor in operation, with all the usual text handling functions such as cut, paste and copy.

As before HiSoft have provided the compiler program along with the BASIC editor to convert listings into stand-alone programs which can be executed from the Desktop – most other versions of BASIC supply the compiler separately. You can compile BASIC listings as TOS, PRG or TTP programs, and even create Desk Accessories. Listings from previous versions of *HiSoft Basic* can be imported and converted, as can ASCII listings from other BASICs. Also supplied is a BASIC version of HiSoft's

MonST, a monitor program which can greatly ease the debugging of BASIC listings.

The DMA sound chip of the STE is now supported, along with purely TT functions such as the maths co-processor. Using the supplied WERCS resource construction set, you can create resource files for use with GEM programs – these are files containing the information used in GEM programs about forms, dialog boxes, menus, icons and other GEM features not usually accessible from BASIC. *Neochrome* and *Degas* picture files can be imported for use as icons or images within forms and dialog boxes, saving you the tedium of creating icons pixel by pixel in the icon editor.

The manuals are both over 400 pages in length and cover all the features of *HiSoft Basic 2*. All the BASIC commands are listed and explained in great detail, and there are sections which include information on GEM, WERCS, linking BASIC programs to assembly or C routines, Desk Accessories and so on. All in all, a comprehensive piece of writing to cover a comprehensive version of the BASIC language.

CLIVE PARKER

STF RATING: 85%

The most helpful killer

Ultimate Virus Killer v5.4

MACHINE: ALL STs, HIGH AND MEDIUM RES

PRICE: £9.99

FROM: DOUGLAS COMMUNICATIONS

CONTACT: 061 456 9587

It wasn't long ago that *UVK* v5.3 was being reviewed in these very pages (STF 34 to be precise), and already the new version has been released! Douglas Communications did say they were going to bring out a new version every three months or so, and they are sticking to it! *Ultimate Virus Killer* is acknowledged as the very best program of its kind around, and each release gets even better. The basic job of *UVK* is to check your floppy disks for virus infections, and to deal with them if any are found. *UVK* also fulfils some other useful functions, like repairing the bootsectors of disks damaged by viruses.

As new ST viruses are discovered, these are added to the list that *UVK* can detect. Not only that: many utility programs hijack certain memory addresses of your ST, and these can look "suspicious" when *UVK* runs its automatic system check. Each update of *UVK* has added any new utility programs like this to those it recognises as being kosher. Each new release of *UVK* also adds extra data for various bootsectors. Games disks and some

other software have to be booted up from the original disk rather than run from the Desktop. *UVK* has to be able to recognise all these as being legitimate executable bootsectors, and is also able to repair and restore damaged bootsectors. Much new software is now included in the Data pack supplied with *UVK*.

The latest version of *UVK* can recognise and repair over 1,000 different bootsectors, and the way it operates has been improved, giving you the option to carry out even faster searches when it scans through a whole disk looking for Link viruses. There have been a few cosmetic improvements to the look of the program too. If you already have a copy of *UVK* and are a registered user, Douglas Communications offer to supply the latest version for an upgrade fee of £5.00. If you don't already have a virus killing program, the modest £9.99 for *UVK* v5.4 is not much to pay for peace of mind.

PETER CRUSH

STF RATING: 85%

The quick brown fox jumps
over the lazily meandering
Derwent in Derby.

The quick brown fox jumps
over the lazily meandering
Derwent in Derby.

● Miles away from the old computer-like style of printing with The ST Club's "Derwent" font. It's so old looking, it looks new! Add your own ink blots and smudges for complete authenticity.

Fancy fonts

Fontpac Plus

MACHINE: ALL STs

PRICE: £9.95

FROM: THE ST CLUB

CONTACT: 0602 410241

If you have any software that uses GEM fonts, like *Timeworks DTP* for instance (v2 is available at the special price of £99.95 – see page 94), you might like to add some extra fonts to brighten up your documents. (A font is a set of characters in a particular typeface.) How about an elegant scripted font that looks like it was written by hand using nib and ink? "Derwent" might be right up your calligraphic street. It's a newly released font in the *Fontpac* series of GEM fonts available from The ST Club.

GEM fonts are bitmapped – that is, made up of patterns of little dots. Their major shortcoming is that they involve lots of data: a set of information for the printer you are using, so it can print all the characters; another set of data for displaying the characters on a mono screen; and yet another set of screen font data for display on a colour monitor. And you need these three sets of font data for each "point size" or height of character you want to use. What's more, you have to be careful to store all the data in the right places and set up a file called *ASSIGN.SYS* on your Boot Disk, together with *GDOS* (the extension of GEM that controls font

usage), so your program can find what it needs... Does this all sound a bit daunting? It's not as difficult as it seems, thanks to The ST Club's clear printed instructions and on-disk documentation. If you want to have a go with fonts, you couldn't pick a better route to start.

The Derwent font is a 45 degree (diagonally stressed) calligraphic font based on "Foundational Hand." 12 different point sizes are supplied on the disk, ranging from six-point to 28-point (that is, tiny to huge – this text is eight-point). Also included are 16-point white out of black, 22-point 3D, 27-point Pattern and 28-point Contour. You must specify what printer type you want the fonts supplied for: 300 dot-per-inch laser and deskjet printers, 180dpi 24-pin printers or 360dpi 24-pin printers.

The font is of excellent quality, and represents very good value with the wide range of point sizes supplied. There are already other fonts in the series, and more are expected. And if you really get into fonts, The ST Club offer *Fontkit* for just £19.95, enabling you to edit and design your own.

PETER CRUSH

STF RATING: 83%



● The Auto Mouse/Joystick Switch from Alfa Data is an ingenious little device, enabling you to instantly switch from your mouse to a second joystick without unplugging.

Make the switch

Auto mouse/joystick switch

MACHINE: ALL STs

PRICE: £17.95

FROM: GASTEINER TECHNOLOGIES LTD

CONTACT: 081 365 1151

Everybody knows that the worst bit of design ever was the positioning of the ST's mouse and joystick ports under the keyboard. The recessed sockets are virtually impossible to get at without turning the machine upside down, which probably means disconnecting all the other leads – it's a nightmare! If you want to play a game that involves two joysticks, you have to go through the hassle of disconnecting the mouse, plugging in a second joystick, then changing it all back before you can use the mouse again. And you have to turn your ST off while you do all this, which means all the bother of re-booting. It's enough to put you off ever even trying, isn't it?

The solution is the Automatic Mouse/Joystick Switch. This little gizmo is made by Alfa Data, who also make a good range of nifty accessories for the ST including memory expansion kits. This plastic cartridge has two D-shaped 9-pin joystick sockets mounted one at either end, and a flying lead terminating in a 9-pin plug comes out the side of the cartridge. On the top are two little LEDs, one red,

one green. On the base of the unit is a notice reading, "This side DOWN!" – which proves that the Taiwanese do have a sense of humour after all.

To use the device all you need to do is plug the lead into your ST's mouse port and connect both your joystick and mouse leads to the cartridge. All switching is done by the internal circuitry of the unit. Click your mouse button and the unit automatically switches over to the mouse; hit the <Fire> button of your joystick and it switches over to the joystick. The mouse is deactivated until you click it again, and the appropriate LED on the cartridge lights up to show you whether the mouse or the joystick has control.

There's no doubt this is a really handy little box of tricks, but it's a shame that the lead which connects it to the ST is not a bit longer. This would enable you to position the switch unit at the back of the machine, keeping all the connections to it out of the way. As it is, you must put up with a little clutter in exchange for a lot of convenience.

PETER CRUSH

STF RATING: 78% ➔

POWER COMPUTING

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Following the huge success of the Amiga Power Scanner, we have been hard at work to produce a product of the same high quality for the Atari ST, and are proud to present the new Atari ST Power Scanner.

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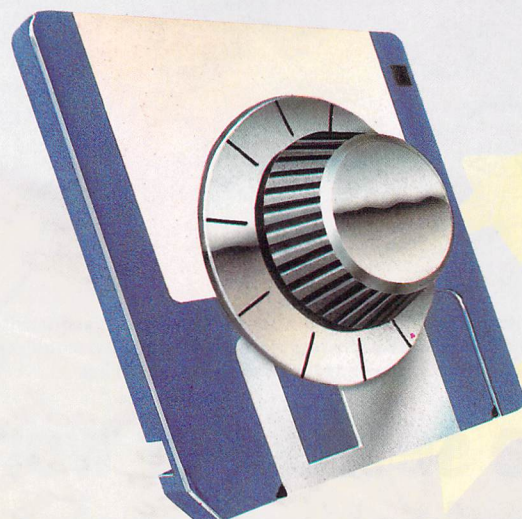
The unit is supplied with the 'PowerScan ST' software-a powerful and user-friendly utility boasting features normally only found on far more expensive products including:

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*Still being finalised, may not operate at all resolutions

The Ultimate Cartridge



The Ultimate Cartridge will break into any Atari ST program. Whether you're a programmer, hacker, games player, or just curious about your Atari ST, The Ultimate Cartridge gives you the power that you need. Updates available with new software.

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| Print memory | Examine formats |
| Disassemble | Format analyser |
| Disassemble to disk | File editor |
| Edit memory | Directory editor |
| Search for graphics | Formatter |
| Search for sprites | Break and restart function |
| Edit screen configurations | Search for infinite lives |
| Set up colour palettes | Look for music |
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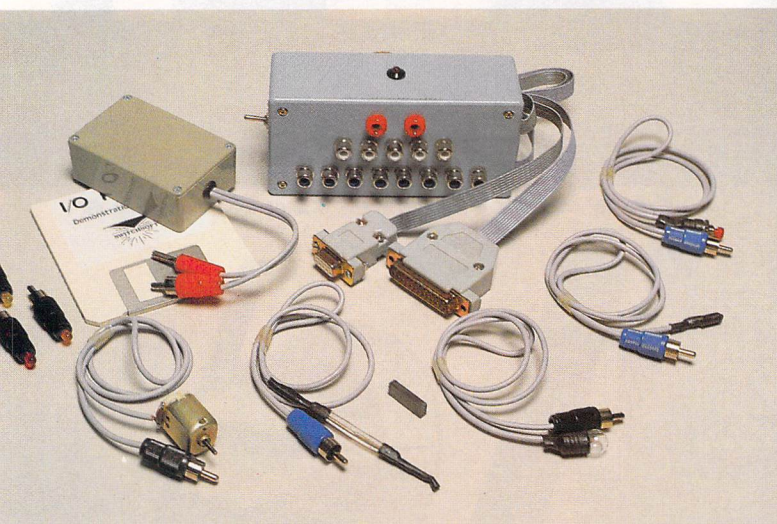
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● The Switchsoft I/O Port, with the Sensor and Control Experimenter's Kit. The Kit costs £27.95 and comes with six projects, covering LEDs, motor control, reed switch and magnet, light control, tilt sensor and switching.

The secrets of world domination, part one

Switchsoft input/output port

MACHINE: ALL STs

PRICE: £26.95

FROM: SWITCHSOFT

CONTACT: 0325 464423

Fancy using your ST to control time-lapse photography, burglar alarm systems and experimental robot control kits? Now you can, with the Switchsoft I/O Port. It's a simple looking boxy device about eight inches long which can provide an interface between the ST and external hardware devices.

It is easy to set up the interface. A 25-pin D plug is connected to the printer port on the back of your ST and a 9-pin plug is connected to the joystick port. (It is important to remember that nothing should ever be plugged into your machine while it is switched on.) Once the I/O port is connected an LED should light up on the unit when your ST is switched on.

The unit itself has two rows of phono sockets on the top: a row of eight which can be used as either input or output ports and a row of five for input only. There are also two other sockets, which are +5v supplies from the ST to power external devices. Be careful not to connect anything which draws more than 100 milliamps of current or the ST won't be able to cope. A separate power supply is recommended in such cases.

Your ST must be able to send and receive signals through the interface in order to be able to control anything, and this is done through simple BASIC routines that can be used with the most popular versions of the language.

BASIC itself does not actually contain commands to directly communicate with the I/O port, but it does have commands which access the centronics and joystick ports. The commands in the form of procedures or sub-routines are supplied on disk with the interface and can be merged into your own programs. The routines are provided in GFA Basic 3, GFA Basic 2, Hisoft Basic, ST Basic and STOS. Details of using the interface with other languages such as C or assembly language are included in the manual.

The Input/Output Port is easy to set up and use, and everything is simply and clearly explained in the manual. Additional experiment and project kits can also be obtained from Switchsoft to help you get even more from the unit. These include a Buggy Kit (£39.90), for constructing your own ST-controlled car, a Light Sensor Kit (£19.95 – "ideal as an optical sensor for a mobile robot, enabling it to move towards a light source," it says here) and a Mains Controller Module (£25.95), which enables you to control any appliance in your home which uses a standard mains plug. Switchsoft also offer a full robotics service – including everything from pulleys, wheels and axles to motorised gearboxes and Lego Technic. Call them for details.

CLIVE PARKER

STF RATING: 76%



● The only cord involved links the receiver unit to the ST's mouse port – the Alfa Data infra-red mouse itself is free from any attachment. Coloured lights on the receiver unit flash when you click or move the mouse about – it's all jolly exciting, really.

● The receiver unit incorporates "fascinating LED indicators" (it says here) which display left or right button clicks, data transfer or recharging mode.

Wireless wonder

Alfa Data infra-red mouse

MACHINE: ALL STs

PRICE: £49.95

FROM: GASTEINER TECHNOLOGIES LTD

CONTACT: 081 365 1151

Imagine a mouse with no tail, but a little infra-red nose that can help control your ST, and you have the remote rodent from Alfa Data. Why should anybody want such a device? Well, it's quite convenient not to have a mouse cable flapping about, it enables you to work at a distance – up to five feet – from your ST, and apart from all that it's pretty damn flash!

The infra-red mouse looks more or less like a normal mouse, except it has three buttons instead of the usual two. Only the two outer buttons actually work, the middle one being reserved for future development. A small glass lightbulb-like protuberance (situated where a real mouse's nose would be) transmits invisible infra-red signals to a receiver unit, which plugs into the ST's mouse port. With the receiver situated out of the way at the rear of your desk, you can wheel the cordless mouse around quite unattached on the little mouse mat provided.

The receiver unit draws power from the mouse port into which it plugs, and a rechargeable cell in the

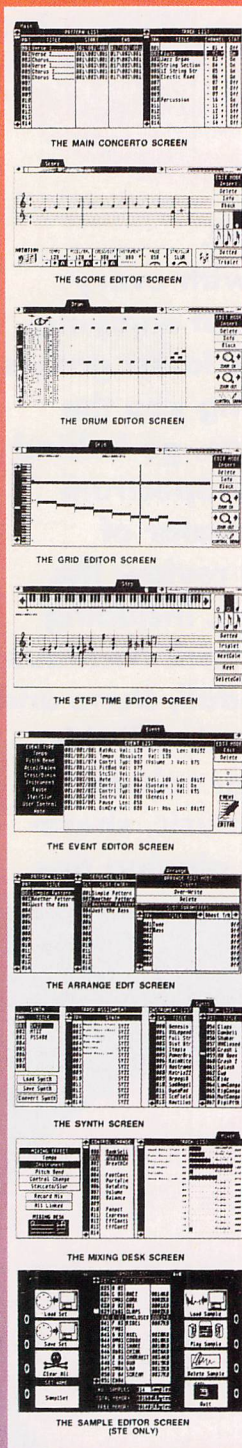
mouse enables it to transmit. When the ST is not in use, you can flip open the receiver unit's top and stand the mouse inside it to be recharged using a small PSU provided, rather like a cordless phone. The unit works without any problems, boasts a high resolution of 260dpi and should be compatible with all your programs and mouse Accessories, including Mouse Tricks (reviewed STF 34).

The infra-red mouse is obviously not an absolutely essential gizmo, but it could make using your ST more convenient – and if you need to replace your existing mouse anyway, the extra cost might be worthwhile for the sheer novelty value. On the other hand, you have to remember to keep returning the mouse to its cradle to recharge it; it can be annoying if anything gets in the way of the receiver, blocking the line of transmission; and it is certainly expensive compared to ordinary mice. Flash, but it brings with it a whole new set of drawbacks.

PETER CRUSH

STF RATING: 61%

complete The complete MIDI sequencing solution



CONCERTO is a powerful but friendly music program with which you can compose and arrange any type of music from Classical to Rock, Pop, New Age and Jazz. Use it with any MIDI instrument. Simple, step-by-step instructions help you set up the program and equipment.

CONCERTO is mouse-driven with keyboard shortcuts for most operations. It has easy-to-use GEM-like controls but with many advanced unique Card Tab Index system gives you instant access to nine control screens.

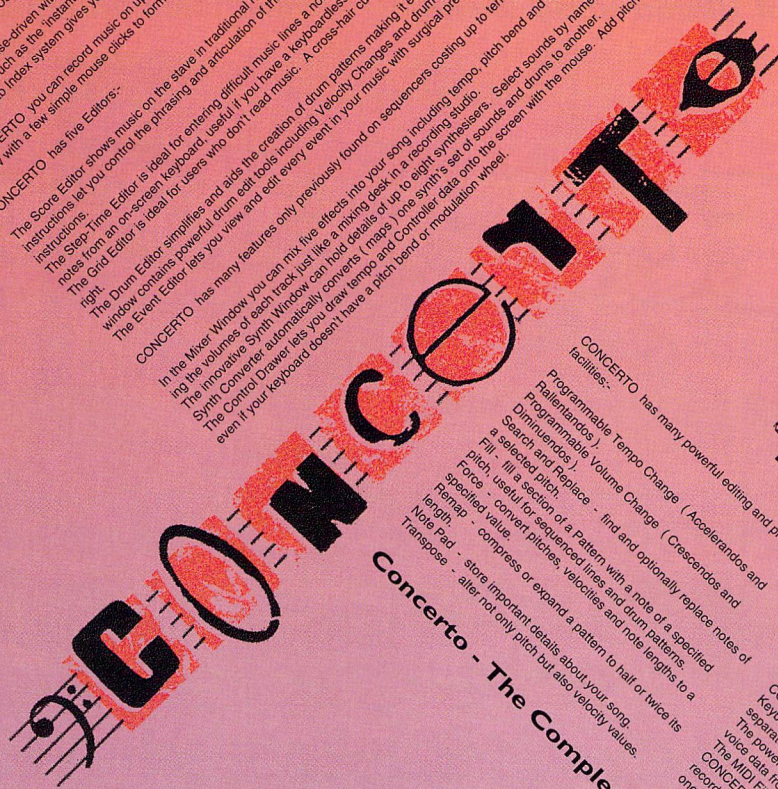
In CONCERTO you can record music on up to 24 Tracks and assign them to 100 Patterns. Link the Patterns together in the Arrange window with a few simple mouse clicks to form a complete Song. Making music has never been easier.

CONCERTO has five Editors:-

- The Score Editor shows music on the stave in traditional notation. Notes can be clicked into place on the score and Saccato and Slur instructions let you control the phrasing and articulation of the music. Programmable Pauses (Fermata) avoid messy tempo change.
- The Step Time Editor is ideal for users who don't read music. A cross-hair cursor makes it easy to get the pitch and duration of the notes exactly right.
- The Grid Editor simplifies and aids the creation of drum patterns making it easy to program rock steady rhythms. The Drum Operations window contains powerful drum edit tools including Velocity Change and drum substitution.
- The Event Editor lets you view and edit every event in your music with surgical precision.

CONCERTO has many features only previously found on sequencers costing up to ten times as much:-

- In the Mixer Window you can mix five effects into your song including tempo, pitch bend and control changes. You can ride the faders' mix-ing the volumes of each track just like a mixing desk in a recording studio.
- The innovative Synth Window can hold details of up to eight synthesizers. Select sounds by name and click them into the score. A unique Synth Converter automatically converts (maps) one synth's set of sounds and drums to another.
- The Control Drawer lets you draw tempo and Controller data onto the screen with the mouse. Add pitch bend or modulation to your music, even if your keyboard doesn't have a pitch bend or modulation wheel.



CONCERTO has many powerful editing and processing facilities:-

- Programmable Tempo Change (Accelerandos and Rallentandos).
- Programmable Volume Change (Crescendos and Diminuendos).
- Search and Replace - find and optionally replace a selected pitch.
- Fill - fill a sector of a Pattern with a note of a specified pitch, useful for sequenced lines and drum patterns.
- Force - convert pitches, velocities and note lengths to a specified value.
- Tempo - compress or expand a pattern to half or twice its length.
- Note Pad - store important details about your song.
- Transpose - alter not only pitch but also velocity values.

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Video Barcode Barcodes • EAN and UPC Barcodes • Industrial Type of Two • Code 39 Barcodes

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Grammar Checker

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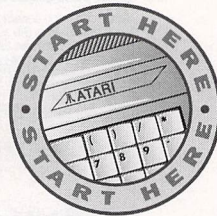
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Down to business



Do you want to plan how to use your milk more carefully or just work out why you're overdrawn a week after you've been paid? A database, spreadsheet or accounts program could enable you to solve the mystery of where all the money goes. Simon Williams puts the record straight

Business software applications are extremely useful, there's no doubt about that. Just because they might not excite you as much as DTP or music packages, say, it doesn't mean you should dismiss them as boring and not worth a second look. They are all there to make your life easier – and so give you more time to get stuck into being creative. Business applications are also, as their name suggests, widely used by many enterprises – if you really get into using them, your attractiveness to an employer is sure to increase.

You can use **databases** for holding information in discrete chunks called *records* – you might set up a record for each name in your address book or perhaps for indexing all the Public Domain software *STF* has ever reviewed, sorting it by rating, subject or PD library. **Spreadsheets** can be used for many purposes, but one of the simplest is forecasting. If you set out all your expenditure for the next six months, a spreadsheet could help you assess by how much your disposable income is going to fall when BT's rates rise by 15% later in the year. **Accounts** pro-

grams computerise the kind of books you may keep for your personal finances, or for a club or company.

DATABASES

Think of databases as being like the card indexes often used in stuck-for-cash local libraries to keep track of the books. Drawers containing cards for every book are filed in alphabetical order to make it easy for you to find books quickly.

A simple database can do the same thing and many bigger libraries now use such computer systems. The database displays information one screen at a time, with one screen for each book. In database terms, each card is called a "record" and each piece of information on the card – for example the title, author, publisher or ISBN number of a book – is placed in a field.

Rather than employing a librarian to keep the records in order, the job is given to the ST, which is ideally suited to searching and sorting information arranged like this. In a manual index, you need to physically shuffle through the cards to find a book with a given title. With a database, you could ask your ST to find all books by I Asimov with "Foundation" in their titles and expect a list of three on-screen within a couple of seconds.

A library traditionally keeps two indexes – one organised by book title and another sorted by author. These are each kept in separate sets of drawers, though the information on the cards in each would be the same. With a database, you can use an index to sort them by author one minute and switch to another index, so they're listed by title, for example, the next. You can also specify an order within an order, for example to list all titles alphabetically, or

MAKE IT SO, DATA

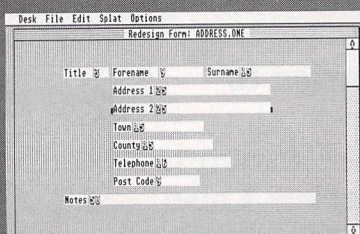
You've probably heard of the Data Protection Act – it protects people from having their name and personal details being stored on a computer somewhere ready to be called up and held against them should the occasion arise. Well, if you intend to hold personal information on a database – that is, more than simply names, addresses and telephone numbers – it affects you.

To ensure that you're not in contravention of this Act, you have two choices. If the number of people is small – as in the case of a club, for instance – you can write to each person and obtain express permission to

hold relevant facts on your ST. If you don't do this you must contact the Data Protection Registrar and register your use of a computer to store data – forms are available at Post Offices. If you do neither of these things, you are in contravention of the Data Protection Act and are liable to prosecution – which sounds pretty heavy.

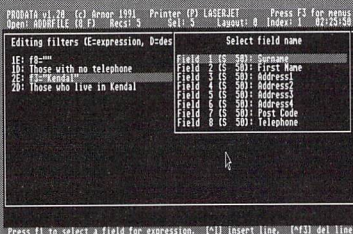
In fact, there are several exemptions to the Act which may apply to a personal database or one for a club. For example, if you're only listing names and addresses and no other information, or if your club is unincorporated, you're exempt from registration.

IT FIGURED. ONCE HE SAW MY RECORD, IT ALL



1 Before you can start filling in the cards in your database, you have to design them. Most programs, even the PD ones like *DB Master 1*, include a record designer, either as a separate program or as part of the main database manager.

The facilities within *DB Master* are extremely easy to use – click anywhere in the record area and a blank field pops up. You can type a name for the field and drag a handle at the right-hand end to size it. The left-hand handle is used to move the field. The number in each shows the field's length.

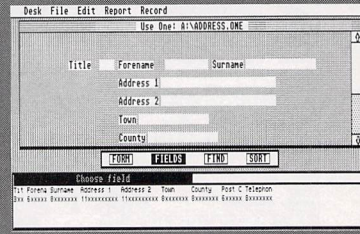


2 Once you've set up a record card and defined your database, you can start to use it either by browsing through from one record to another or printing them out. In most cases, though, you may want to look at only the records which fit in with the job you're doing. You might want to contact all the members of your ST user group in your address list who have a particular skill in assembly programming, for instance.

To do this, set up a "filter" which a program like *Prodata* can apply to the records to select just the ones you want. In this case, the filter is very simple.



3 Most modern databases don't physically move records around when you ask to sort them – to do so means a lot of unnecessary time-consuming disk accessing. What programs like *Prodata* do is set up an index based on the contents of one or more fields and sort that instead. The index is usually held in memory, so sorting can be very fast – there's nothing to stop you setting up several indexes based on different fields. In *Prodata*, you can define up to ten indexes, each of which may be based on up to four fields.



4 The layout you design for your records doesn't have to be the only one you use, particularly when printing out information from your database. A report is a printout with a different layout which can be useful, for example, if you want a list of names and addresses printed one on each line.

DB Master 1 enables you to assemble the layout of a report by clicking in turn on each field you want included. You can also choose from a selection of different report styles and have the records sorted in up to three key fields. All this can be constructed with simple "point and click" actions.

The Sierpiński gasket (last issue) and the Mandelbrot set could not possibly exist in the real world. However, much of chaos theory is based on the natural world. Take the May equation, developed by biologist Robert May to simulate the way that populations seem to fluctuate erratically. This equation forms the basis of one of the most interesting fractals, the Feigenbaum diagram, named after Mitchell Feigenbaum, an eminent chaos researcher. The Feigenbaum diagram represents a complex – and in places chaotic – structure generated from May's very simple, non-random, formula. The accepted name for a non-random process such as this is a *deterministic* process. With this month's Cover Disk, you can watch your ST recreate a great leap in chaos theory.

THE MAY EQUATION

You can see how May derived his equation by considering the spread of a virus through a group of people. The task is to find an equation to predict the number of people infected by the virus at any stage in the future.

Start from the equation shown below. It simply states that the number of people infected at the end of the current week (p_{new}) is equal to the number of people infected at the end of the previous week (p) plus the number of people who have been infected since then (n).

$$p_{\text{new}} = p + n$$

This can't predict the future, because to calculate p_{new} for a given week you already need to know the number of people infected during that week (n). However, it can be shown that n is dependant on the number of people already infected at the end of the previous week (p). This is because the more people are already infected, the more likely an uninfected person is to come into contact with an infected one and become infected in turn. In other words, n is proportional to p .

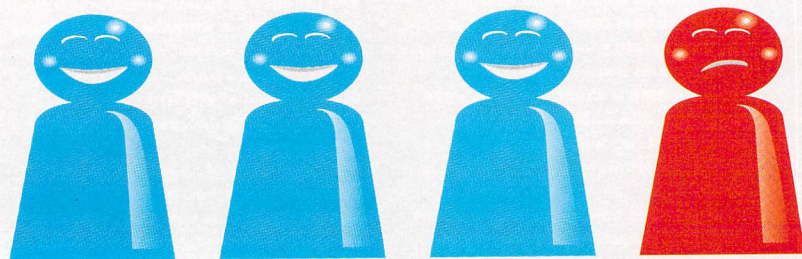
At the same time, infected people cannot be re-infected, so the number of newly infected people (n) must also be proportional to the number of healthy people. What's more, the number of healthy people must be equal to the total number of people in the group less the ones who are infected.

To eliminate the need to know the actual number of people in the group you can use percentages, so the percentage of healthy people in the group is $100\% - p$, as shown below. This can be represented mathematically as $(1-p)$, where by convention 1 represents 100%. Because n is directly proportional to both p and $(1-p)$ you can say that n is proportional to $p*(1-p)$. Put all this together and you get:

$$n = p*(1-p)$$

Substitute this into the equation for p_{new} and you get

100% total



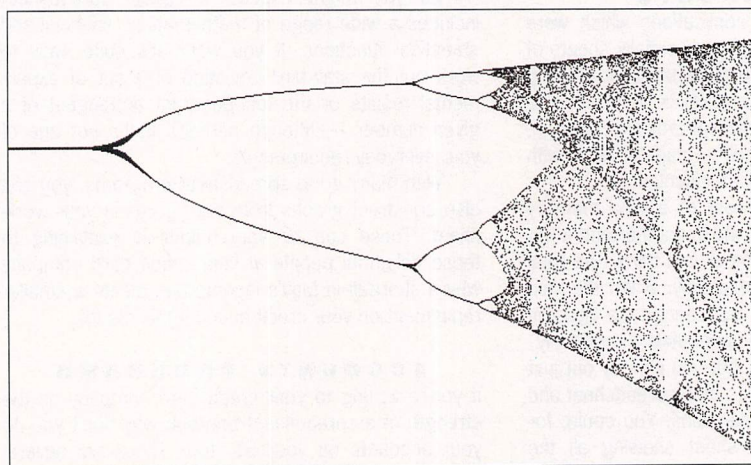
100% - 25% = 75% healthy

25% infected

● It is a straightforward exercise to calculate the percentage of healthy people in a group. And you can easily recognise them by their smug grins.

At the edge

So you thought the Sierpiński triangle was the last word in fractals? The most unpronounceable, maybe, but not the last. It shows how an ordered, intricate structure can be created from a random process. This month, in the second part of *STF's* GFA programming series, Conrad Bessant goes in the opposite direction, creating chaos from order – just like the real world



● Like the Mandelbrot set, the Feigenbaum diagram is a graphic representation of an iterative mathematical calculation. Also like the Mandelbrot set, it has a very difficult name. Why weren't there any chaos theorists named Smith, Jones or Brown, eh?

$p_{\text{new}} = p + p*(1-p)$, but this would cause p to rise steadily to 100% and then stay there. If this were the case in the real world, the existence of the human race would be in doubt. Obviously the equation isn't fulfilling its objective of modelling a real virus.

IMPROVING THE MODEL

In reality some people may not meet as many people as others, a meeting does not mean definite infection and people may recover from the virus. To take such factors into account, add a constant, c , into the equation, representing the success rate at which the virus spreads and persists in the human body. The number of people infected per week (n) is obviously dependant on the value of c , so we now have:

$$n = c*p*(1-p)$$

The actual value of c depends on the type of virus the equation is meant to represent. This enables you to test different viruses with the same equation.

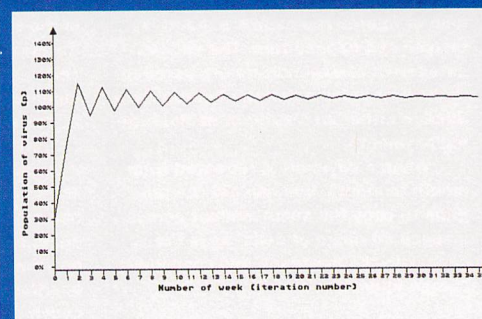
The result of substituting this definition of n into the equation for p is the May equation:

$$p_{\text{new}} = p + c*p*(1-p)$$

USING THE EQUATION

Now that you have your equation you can use it to predict the likely number of infected people at the end of any week. Create a theoretical starting situation (call it week 0) in which 30% of the group have the virus ($p = 0.3$) and the virus has a contamination constant of 1.9 ($c = 1.9$). The calculations to determine the number of people infected after the first four weeks are as follows.

ER, TIME, PLEASE,



● Figure 2a – May time series graph with c (the constant representing a particular virus) = 1.9.

of chaos



chaos (see figure 2d), with p jumping between many different values with no apparent rhythm.

PROGRAMMING THE MAY EQUATION

A simple graph plotting program can be used to experiment with various viruses (that is, values of c).

****Listing 1: the May equation****

```

Cls
Input "Contamination constant, c:", C
!Get value of constant, c
P=0.3 !Set value of initial p
Plot 32,160-P*100 !Move to start of graph
For Week=1 To 35
    P=P+C*P*(1-P) !Iterate equation
    Draw To 32+Week*8,155-P*100
    !Plot line
Next Week
'
Repeat
Until Mousek<>0 Or Inkey$<>""
!Wait for mouse/key press
  
```

This program requests a value for the contamination constant c , and then performs the May equation for this value over a period of 35 weeks, drawing a time series graph (with time plotted horizontally and population vertically) as it goes. To keep the listing short and simple no axes are plotted, but this does not

TRY THIS FRACTAL STUFF YOURSELF!

The two listings in this article can be found on the Cover Disk, in the CHAOS folder. The files are:

- **LIST1_LO.GFA** Low res demonstration of May equation (listing 1)
- **LIST1_HI.GFA** High resolution version of this

- **LIST2_LO.GFA** Low resolution Feigenbaum plotter (listing 2)
 - **LIST2_HI.GFA** High resolution Feigenbaum plotter
- To load the files, start up *GFA Basic* (from last month's Cover Disk – if you missed that, see page 64 for the

FORMAT back issue service) and choose Load from the File menu, or press <F1>. Then choose the program you need from the fileselector. To run the currently loaded program choose Run from the menu bar or press <Shift> and <F10>.

Time	Calculation	People infected
Week 0:	$p = 0.3$	30%
Week 1:	$p = 0.3 + 1.9 * 0.3 * (1 - 0.3) = 0.7$	70%
Week 2:	$p = 0.7 + 1.9 * 0.7 * (1 - 0.7) = 1.1$	110%
Week 3:	$p = 1.1 + 1.9 * 1.1 * (1 - 1.1) = 0.89$	89%

The results are calculated by feeding the previous week's population into the next week's equation. This equation is therefore said to be dependant on mathematical feedback. Like last issue's Sierpiński triangle, this population simulation is an iterative process, but in this case an iteration is defined as one application of the formula.

If more values are calculated for this value of c and plotted on a time series graph (a graph of population against time) you can see that the (infected) "population" swings back and forth a few times before coming to rest at 100%. (See figure 2a.)

The initial swings in the "population" are easy to explain if you remember what the equation represents. An infected "population" below 100% means that some people remain uninfected by the virus. In these conditions the virus generally thrives, spreading itself to as many healthy people as possible. Note that during the first few weeks the number of people infected actually exceeds 100%. This is not an error because values above 100% can be taken to represent "over-population," where there are more occurrences of the virus than there are people. When this happens, many of the viruses cannot sustain reasonable living conditions and therefore die. This means the infected "population" is in turn reduced again.

Now consider what happens when you use a different value of c to represent a different virus. Figure 2b shows graphically the population of the virus with $c = 2.3$. Again, there is some oscillation in the

first few weeks before the virus settles down, but unlike the previous example this virus settles down into a two point oscillation.

Further values for c give even more interesting results. For instance when $c = 2.5$ the population settles down to oscillate between four values (see figure 2c). By the time you reach viruses with constants like $c = 2.9$ the population graphs have degenerated into

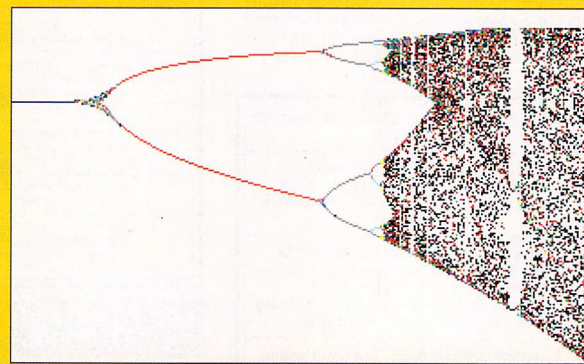
THE COLOUR OF CHAOS

The Feigenbaum diagram is one fractal in which colour can be used quite effectively. In order to add colour you need to know an extra piece of information (other than the x and y position) for each point, which can be represented by the colour of that point. One such piece of information is the number of times each point has been plotted, which would be useful when looking at the number of equilibrium states in different parts of the Feigenbaum diagram. For example, in the period one section of the diagram each point is plotted 50 times, whereas in the period two region every point is plotted 25 times, and so on until in the chaotic region most points are not plotted more than once.

The simplest way to determine the colour in which a point is to be plotted is to find the old colour of the point at the plotting position (using the *POINT* function), increment this value and then re-plot the point in the new colour. The result should look something like the picture below.

Note that the ST only has 16 colours, so it's necessary to limit the colour value to keep it in the range 0–15. The best way to do this is to take modulus 16 (MOD 16) of the colour value.

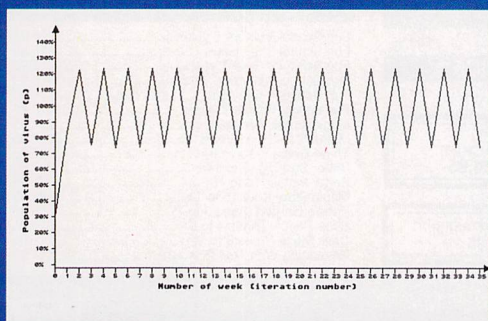
The number of iterations for each point can also be conveyed by plotting the diagram in three dimensions, where the third dimension represents the number of times a point has been visited.



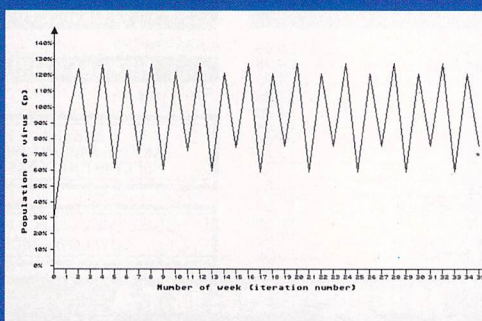
● Adding colour to the Feigenbaum diagram can add extra meaning: here, how many times each point has been plotted.

LADIES AND GENTS

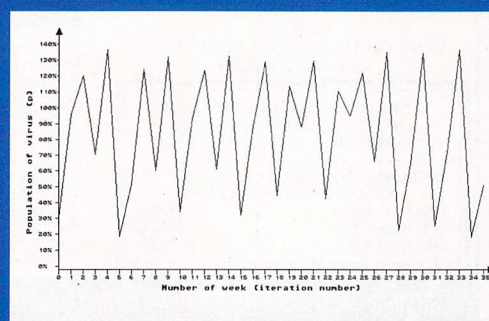
Use the May equation to plot the number of people infected week by week and you get a graph like these. Each week's result is based on the week before's, meaning this is an iterative process



● Figure 2b – May time series graph with $c = 2.3$ – a virus with a higher "contamination constant."



● Figure 2c – May time series graph with $c = 2.5$. The infected population settles into regular oscillation.



● Figure 2d – May time series graph with $c = 2.9$. Inexplicably, the population fluctuates unpredictably.

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LOMBARD



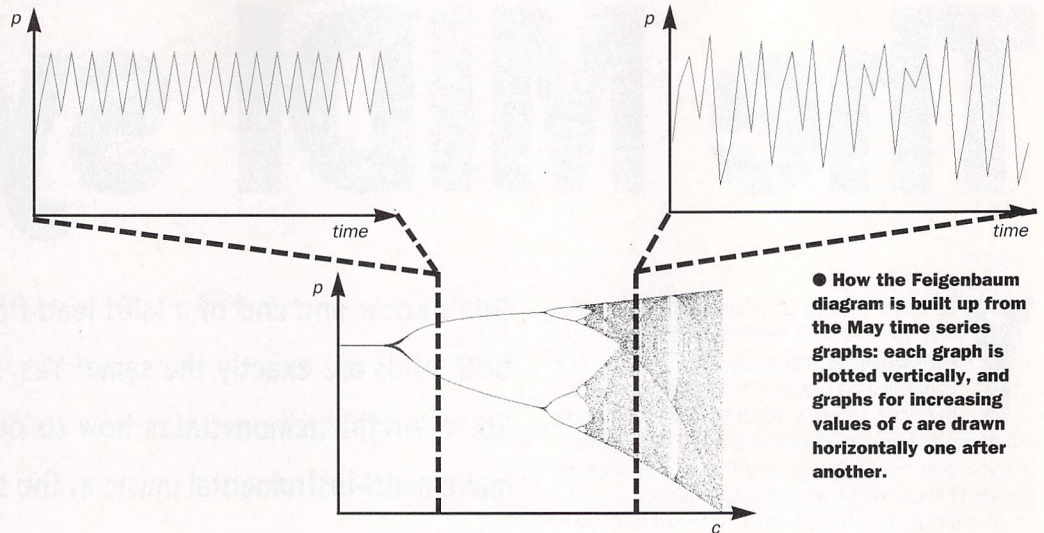
MUSICAL CHAOS

The Feigenbaum diagram is one of the few fractals that lend themselves to the addition of sound. Play a note proportional in pitch to the value of the population, p , and whenever a point is plotted the sound can give an audio representation of how the Feigenbaum diagram degenerates into chaos. At the left-hand side of the diagram the period is one, so the tone is constant; after bifurcation the tone oscillates between two pitches; and by the end of the diagram chaos has broken out, creating a bubbling sound of pseudo-random tones. Adding the following command after the PLOT line is one way to create the sound:

```
Sound 1,15,#(100+P*760),0
```

Because sound in GFA Basic works under interrupts the line below needs to be added at the end of the program to stop the tone being produced.

```
Sound 1,0,#0,0
```



● How the Feigenbaum diagram is built up from the May time series graphs: each graph is plotted vertically, and graphs for increasing values of c are drawn horizontally one after another.

→ matter because the actual values are unimportant – the program is simply used to demonstrate different behaviour patterns. The Cover Disk version does, however, contain a routine to plot the axes.

The main body of the program is the FOR...NEXT loop containing the easily recognisable May equation, and the DRAW TO command, which draws a line from one point to the next. Note that because the range of the week variable (1 to 35) is small in relation to the horizontal screen resolution (0 to 319) used by DRAW TO, the x position passed to DRAW TO must be multiplied by four so that the whole screen is used. Similarly, the population variable p has to be scaled up because of its very small range (0 to 1.3); this is done by multiplying it by 140.

Experiment with this program and you notice four things:

- 1 p always takes a few weeks to settle into a definite pattern
- 2 In most cases the higher the value of c the more values p oscillates between after settling down
- 3 p always oscillates between an even number of values, except in the chaotic regions and when c is one of a certain set of values (try $c=2.83$)
- 4 Values of c above 3.0 give meaningless results, because the attractor for this part of the diagram is minus infinity

THE FEIGENBAUM DIAGRAM

It would be very time-consuming and difficult to find the exact value of c at which the number of values oscillated between curiously goes from one to two using this program. A better way to discover this and other things is to combine the graphs of all the possible values of c into one graphical representation. The composite graph that results from doing this is referred to as the Feigenbaum diagram. Generating this is a relatively simple affair, now that you have a program to calculate successive values of p .

To draw the Feigenbaum diagram it is necessary to compress the time series graph for each value of c so that it fits into one vertical column of pixels on the screen. All of these compressed graphs are then drawn horizontally across the screen, so that they join together to form a two dimensional full-screen map of p against c . This process is shown pictorially the figure on this page, and is performed by the listing below.

This is very similar to Listing 1 except:

- 1 The virus population is now calculated for 100 weeks, but the first 50 of these calculations are ignored to ensure that p is only plotted after stabilisation. Because the system relies on feedback the first

50 calculations must be performed, even though they are not used.

2 All points on the graph are now plotted at the same horizontal position, and are not connected by lines, making oscillatory patterns easily identifiable.

3 Instead of human input for c a FOR...NEXT loop is used to generate values for c between 1.8 and 3.0 inclusive. (Values below 1.8 are uninteresting, because they stabilise at a single value.)

```
**Listing 2: Low res Feigenbaum plotter**
For C=1.8 To 3 Step 0.00385
  P=0.3      !Set initial value of p
  For Week=1 To 100
    P=P+C*(1-P)
    !Calculate new population
    If Week>50
      Plot (C-1.8)*260,200-P*140
      !Plot point on diagram
    Endif
  Next Week
Next C

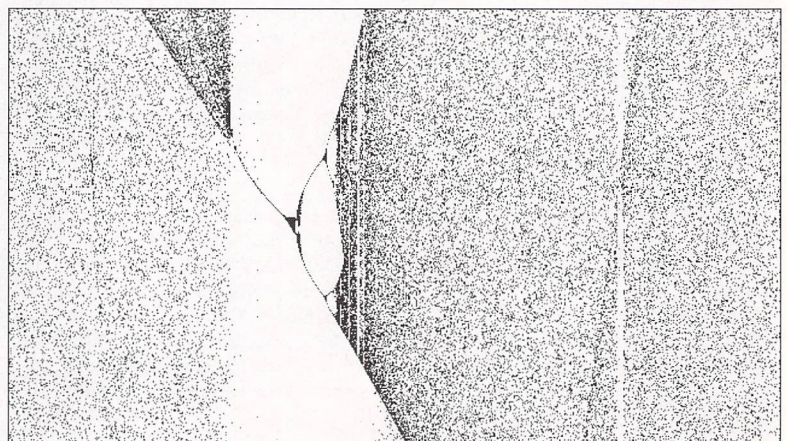
Repeat      !Wait for key/mouse button press
Until Mousek<>0 Or Inkey$<>""
```

WHAT DOES IT ALL MEAN?

The Feigenbaum diagram is not one of the most aesthetically pleasing fractals, but it is a stunning illustration of how a simple, non-random, iterative process can produce a finely structured image in places and total chaos in others.

One result of much scientific study of the diagram is that conventions have been created to describe some of its most important features. The section of seemingly random pixels to the right of the diagram is loosely referred to as the chaotic region.

● A section of the chaotic region of the Feigenbaum diagram enlarged about seven times. Amazingly enough, this reveals smaller Feigenbaums inside the main one. This "self-similarity" is a characteristic of fractal patterns. What a giveaway.



The point where a single line splits into two is called a *bifurcation* and the splitting, or bifurcating, at these points is referred to as *period doubling*, because the number of equilibrium states (the period) doubles. The period is the number of possible values p oscillates between after stabilising – for example the section between 2.44 and 2.54 is period four. By the very nature of period doubling almost all sections past $c=1.95$ have an even number of possible states, but there are some "windows" of order in the chaotic regions which are of period three.

The figure below shows a section of the main window in the chaotic region enlarged to about seven times its original size. This reveals some interesting features. The most striking of these is the very noticeable self-similarity: there's clearly a miniature Feigenbaum inside the window.

The two-way relationship between order and chaos, demonstrated here and last issue, represents a whole new way of perceiving natural processes occurring around us. Although our simple virus population program has inaccuracies it still illustrates the important point that a natural process such as population growth and decline can be described in one simple equation with nothing more than some common sense and simple statistics. Is it possible, then, that even the most complex natural processes can be reduced to simple equations, thus allowing them to be predicted with relative ease? Next month we tackle this important question when we discuss weather forecasting and strange attractors. **stf**

This series is based on Conrad Bessant's book, *Chaos and Computers: Atari ST Edition* (ISBN: 1-85058-247-5). Ask at your local bookstore or call Sigma Press ☎ 0625 531035.

The MIDI system

You don't need to be a musician to use MIDI and you certainly don't need to know how MIDI works to make use of your ST's MIDI capabilities. Look at it this way: did you feel the need to learn about machine code programming before you played your first shoot-'em-up? Did you ever refuse to use a ball point pen because you didn't know what made the ink come out?

If you want to use MIDI, what you need to know in advance adds up to little more than where you have to stick a few leads – and no suggestions required, thank you. The rest is down to your ears, your imagination, and getting the hang of some software. With a simple MIDI setup, anyone can get great results without being able to play a note of music.

Get great results? Yes – imagine being able to write music by playing a MIDI keyboard just one note at a time, by typing notes in from the ST's keyboard, by clicking with the mouse, or by any combination of these three. Imagine being able to construct your music as slowly as you like. Imagine being able to correct any mistakes at any stage. And imagine being able to hear everything you've done so far – instantly, at any time, at any speed. *Of course* you can get great results. We show you how you can put together a simple MIDI setup for you to make your own multi-instrumental music. You don't even need to worry about how many instruments you have to splash out for. Thanks to "multi-timbral" MIDI keyboards and sound modules, one instrument can behave like many, giving the effect of a complete band – all in the comfort of your own home.

HARDWARE

Where do you start? First, you need the basic equipment – an ST, a MIDI keyboard instrument, two MIDI

Don't know one end of a MIDI lead from the other? Not surprising really – both ends are exactly the same! Yes, MIDI is a lot easier than you'd think.

Steve Wright demonstrates how to put together a MIDI setup so you can make multi-instrumental music in the second part of our music series

● **Picture 1 on the right shows you how to connect just one MIDI instrument, like a keyboard, to your ST. Now, what could be less daunting?**

leads and some form of amplification (some keyboards have built-in speakers, but failing this, any hi-fi equipment with line inputs will do). Let's take the leads first. You may end up using more than two, but that's enough to get you off the ground. Proper MIDI leads have 5-pin DIN plugs at both ends, but only three of the five pins are wired up. Buying any 5-pin DIN lead is not the same as buying a MIDI lead, so we don't recommend you do that. The real thing is easily obtainable from most hi-tech music shops. In fact, you may not need to worry about MIDI leads if you have a MIDI keyboard – MIDI leads are often included.

So what's a MIDI keyboard? If you have a keyboard which was bought in the last few years, the

chances are that it has MIDI. Look at the back of it – if it has two or three five-pin DIN sockets labelled IN, OUT (and, if it's there, THRU), then you have a MIDI keyboard. If you need to go out and buy one, the cheapest are the Yamaha PSS range – these are multitimbral MIDI keyboards – brand new, they start at around £200.00. If your MIDI keyboard is not multitimbral, you can only get one type of sound out of it

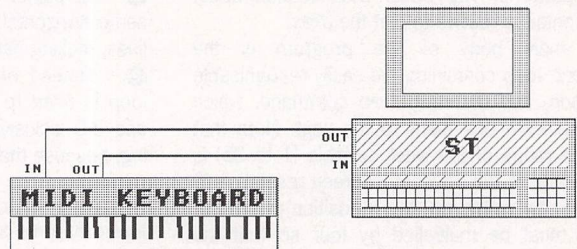


Figure 1

MIDI connections for a single keyboard

ALL YOU NEED TO KNOW ABOUT SEQUENCERS

NAME: Cubase
CONTACT: Evenlode Soundworks
☎ 0993 898484
PRICE: £575.00
MACHINES: All STs with 1MByte RAM.
High res only
NO OF TRACKS: 64
FEATURES: Runs under MROS multitasking system (supplied), and has excellent graphic song arrangement facilities.

NAME: EditTrack Gold v6.01
CONTACT: Atlantic Audio
☎ 071 272 8944
PRICE: £116.32
MACHINES: All STs and STEs with 1MByte RAM
NO OF TRACKS: 60
FEATURES: Fast and reliable, with advanced graphic editing.
Good value-for-money.
STF RATING: 86%

NAME: Notator
CONTACT: Sound Technology
☎ 0462 480000
PRICE: £550.00
MACHINES: All STs with 1MByte RAM;
high res only
NO OF TRACKS: 64
FEATURES: Runs under Softlink multitasking system (supplied), and is renowned for its excellent scorewriting capabilities.
STF RATING: 92%

NAME: Prodigy
CONTACT: The Digital Muse
PRICE: £170.00
MACHINES: All STs and STEs
NO OF TRACKS: 32
FEATURES: Excellent piano-roll editing and very fast screen re-draws. A score-edit facility is available.
STF RATING: 59%

NAME: Sequencer One
CONTACT: Gajits
☎ 061 236 2515
PRICE: £129.95 – or £39.95 if to order your copy.
MACHINES: All STs and STEs
NO OF TRACKS: 32
FEATURES: Easy to use, good graphic editing.
STF RATING: 91%

NAME: Sequencer One Plus
CONTACT: Gajits
☎ 061 236 2515
PRICE: £129.95 – or £39.95 if upgrading from *Sequencer One*
MACHINES: All STs and STEs
NO OF TRACKS: 32
FEATURES: Greatly enhanced graphic editing compared to *Sequencer One* and special "Jukebox" song file player. Look out for our review coming soon.

NAME: Rave
CONTACT: The Digital Muse
☎ 071 828 9462
PRICE: £39.99
MACHINES: All STs and STEs
NO OF TRACKS: 32
FEATURES: Basic features only, but a good price – and upgradeable to the more sophisticated *Prodigy* and *Virtuoso* packages.

NAME: Tiger Cub
CONTACT: Zone Distribution
☎ 071 7385 444
PRICE: £99.00
MACHINES: All STs with 1MByte RAM
NO OF TRACKS: 12
FEATURES: Very good graphic editing for the price. Also has the ability to display traditional music notation.
STF RATING: 85%

at a time. This is fine for music for one solo instrument, but you may feel the need to do more than this before long. One option well worth considering is a multitimbral sound "module." A sound module is like a synthesizer without a keyboard. Provided you have a MIDI keyboard, a sound module is feasible. MIDI enables devices to be linked together so that they work as a single instrument. So, if you plug a MIDI lead from your keyboard (MIDI OUT) into a sound module (MIDI IN), you get sounds from the module just by playing the keys on the keyboard. Link your ST into this chain, and much more becomes possible. Study pictures 1 and 2 to see how to connect your equipment, and for more information about MIDI Instruments, see the MIDI Instrument Roundup below.

THE SOFTWARE YOU WANT

Your next step is to decide on some MIDI software. To get the most from MIDI, your first acquisition

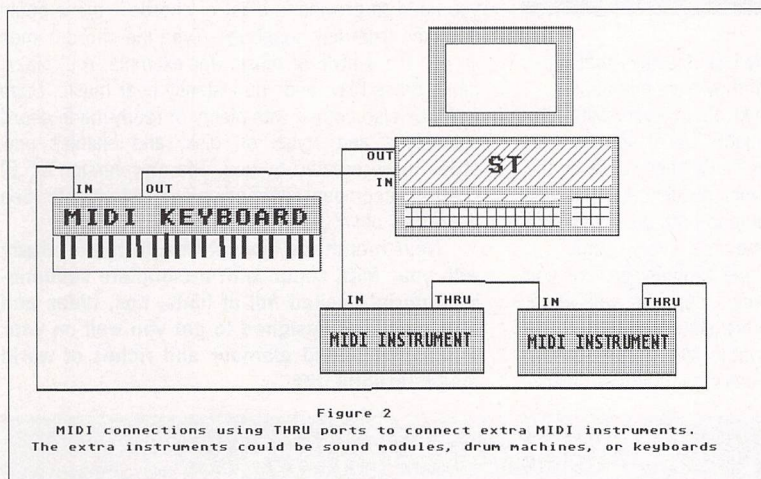
priced package of a few years ago can now be found on current Public Domain sequencers. If that's still not cheap enough for you, remember that we gave away a fully-working version of Gajits' *Sequencer One* with STF 30 – still available as a back issue (see page 64).

WHAT IS A SEQUENCER?

In a nutshell, it's a composing device – in other words you can create music with it. There are three popular analogies:

1. A sequencer is like a tape recorder.

Yes, in the sense that it records and plays back music. But there's an important difference which often causes confusion. A tape recorder records actual sounds and plays them back itself. A sequencer, however, only records information about which notes to play and when to play them, then sends this information to the synthesizer. It is the synthesizer that actually makes the sounds – not



should be a sequencer – the heart of any MIDI system. Although professional sequencing packages can be very expensive – some cost over £500.00 – there are now a number of reasonably-priced packages to choose from. Because of the large number of different sequencers that have appeared on the market in recent years, many of the good packages have now got cheaper, and what's more, many of the cheaper ones have got better. All the features of a typical mid-

piano that can play automatically, provided you feed a roll of paper through it that has holes punched in it. As the player piano "reads" each hole in the piano-roll, a mechanism causes a key to be pressed. The result is that the piano seems to play by itself – as if there's a ghost pianist there. The player piano is like a primitive sequencer, except that it only does piano sounds! Many sequencers have piano-roll style graphic editing – the screen looks like a piano-roll,

● **Picture 2 on the left shows you how to connect more than one MIDI instrument to your ST. More complicated, but still simple.**

your ST. Some sequencers have a front end which is designed like a tape recorder's transport controls – Record, Play, Rewind, Pause and so on.

2. A sequencer is like a player piano.

A player piano is a piano that can play automatically, provided you feed a roll of paper through it that has holes punched in it. As the player piano "reads" each hole in the piano-roll, a mechanism causes a key to be pressed. The result is that the piano seems to play by itself – as if there's a ghost pianist there. The player piano is like a primitive sequencer, except that it only does piano sounds! Many sequencers have piano-roll style graphic editing – the screen looks like a piano-roll,

THE INs, OUTs AND THRUs

The MIDI INs and MIDI OUTs are easy, but people get confused about the purpose of MIDI THRU. The IN port is where all the MIDI data entering the device arrives, and the OUT port is where all the MIDI data generated by that device leaves. The key words here are "generated by that device," because all MIDI data arriving at the IN port is also automatically sent out again via the THRU port.

Look at picture 2 to see how it's all wired up. MIDI information can be coded with a channel number which corresponds to the instrument for which it is intended; or, looked at another way, each instrument in a MIDI setup may be configured to respond to MIDI data on a specific channel. So, if your ST is sending out MIDI information on several channels at once, the THRU ports can be used to chain instruments together so that they all receive all of the data, even though each one only uses the data which is specifically intended for it.

Incidentally, the ST is unusual in that its OUT port can also be used as a THRU, but it's a non-standard THRU, so a special MIDI lead is necessary to take advantage of this facility. You don't need to do this for any of the applications here, because all the software mentioned is capable of making the standard MIDI OUT aspect of the port work like a THRU where necessary.

dotted with tiny rectangular shapes of different lengths which represent the notes. Click on one and you can change its pitch, loudness, start-time or duration.

3. A sequencer is like a word processor for music.

Just as you can cut, copy and paste text in a word processor, so you can arrange and re-arrange bits of music in a sequencer. You can correct outright mis-

MIDI INSTRUMENT ROUNDUP

All the instruments listed below are either very reasonably priced or good value-for-money. They all have multitimbral MIDI capabilities with built-in drum and percussion sounds. Remember that if you already have a MIDI keyboard which is not multitimbral, buying a sound module is probably cheaper and more practical than forking out for an additional keyboard. Musical instrument prices are always subject to change, making it difficult to be specific about what you should expect to pay. Generally speaking, you shouldn't have to pay more than the prices given below.

Golden rule: don't buy anything you haven't listened to and liked.

KAWAI K1 Touch-sensitive, 61-note, eight-part multitimbral synthesizer with standard size keys which can be bought new for £600.00 or less. A second hand bargain is well worth hunting for. The K4 is a little more expensive but is 16-part multitimbral and has extra synthesizer features.
(Turnkey ☎ 071 379 5148)

ROLAND MT-32 Nine-part multitimbral sound module which has now been superseded, but which can be bought second hand for around £200.00.
(Roland ☎ 0792 310247)

ROLAND SC-55 SOUND CANVAS Superb high-quality 16-part multitimbral sound module with reverberation, chorus and pan controls. Not cheap at £545.00, but considered by many to be the best buy for the home-based computer musician. Is also available in the form of a multitimbral keyboard, the JV-30 at £789.00.
(Roland ☎ 0792 310247)

YAMAHA PSS-795 A popular and inexpensive (under £200.00) multitimbral MIDI keyboard, with the strange habit of playing its built-in rhythms without you asking it to. Uses "mini-keyboard" which saves space, but may be fiddly for the big-boned. There are other models in the PSS range, and a brand new one is expected soon.
(Yamaha ☎ 081 419 5419)

YAMAHA PSR-400 Touch-sensitive multitimbral keyboard with standard size keys for £389.00. For an extra £100.00 you can have the PSR-500 which has built-in digital reverberation and more sound memory.
(Yamaha ☎ 081 419 5419)

YAMAHA TG-33 A very impressive multitimbral sound module which is much used by professional musicians. Worth the £525.00 price tag if you can afford it. The TG range of modules is paralleled by the SY range of synthesizer keyboards, which also have similar characteristics.
(Yamaha ☎ 081 419 5419)

takes, re-do parts that could be improved, and generally fiddle about until you're happy. In most sequencing packages you can highlight chunks of music for editing just as you would select areas of text for editing in a word processor. Many also provide standard Cut, Copy and Paste options on a pull-down menu.

Think of a sequencer as a mixture of these three, and you've got a pretty good idea what it can do. With so many functions being mouse-controllable, you can see why with MIDI it's no longer necessary to be able to play an instrument to get great results. When choosing a sequencer, think about how you prefer to work. If you're not a musician and can't read music, Score Edit options will be low on your list of priorities, but you'd benefit from easy-to-use, "piano-roll" graphic editing. If you're used to programming a drum machine, look out for a sequencer with a Drum Edit facility, enabling drum patterns to be assembled in a similar way.

Sequencers use different ways of arranging music. Pattern-based sequencers enable you to record short sequences (for example, verse and chorus) and later string them together in the right order to make a complete piece of music. Linear sequencers use a system of cut, copy and paste to enable you to arrange your music. In practice, many sequencers now offer a combination of methods. For more on sequencer features and prices, see the Sequencer Roundup on page 122.

But there's more to MIDI than sequencing. Important breeds of MIDI software are patch editors and librarians. These are packages which enable you to exercise control – from your ST – over the actual sounds ("patches") your synthesizer makes. Librarians enable you to name your sounds, classify them

and save them to disk. To actually create and change your synth's sounds, get an editor. Editors – which also normally have librarian capabilities – take advantage of the ST screen to provide a sophisticated user interface for sound editing, often with graphics. For example, many patch editors have mouse-controllable graphic editing for changing envelope shapes relating to how quickly the sound starts or dies away. The envelope is usually shown on-screen as a graph, with the sound's loudness plotted against time. You just click and drag on the envelope diagram to change the way it looks and what you hear. This is a

To use MIDI, what you need to know adds up to little more than where to stick a few leads – the rest is down to your ears and your imagination

big improvement on the tiny LCD displays that most synths are equipped with – if they have one at all.

There are editors for just about every MIDI synthesizer that's ever been made, but if you want to buy one, try to get an editor that's been made by the same company that made your sequencer. That way it's more likely that you can load both pieces of software into your ST at the same time – very useful.

If you have more than one synthesizer – or you expect to buy one before long – consider a universal (or "generic") editor. These are editors which can be configured for any MIDI synthesizer within reason. The advantage of buying a universal editor is clear –

you only need one! Universal editors are regularly updated to support new instruments as they come onto the market. Make sure you check with your supplier that the editor you are after definitely supports your synths. These are the most reputable universal editors: *Chameleon* (Keynote ☎ 0761 432610, £89.00), *X-OR* (Zone Distribution ☎ 071 7385 444, £219.00) and *Genedit* (Atlantic Audio ☎ 071 272 8944, £245.58).

A quite recent development is auto-accompaniment software, the best examples of which are PG Music's *Band In A Box* (Zone Distribution ☎ 071 7385 444 £45.00), *Frolich's Freestyle* (Zone Distribution £149.00) and *JCD's Feeling Partner* (Music Pro Import (UK) ☎ 081 789 8641 £175.00). Although these packages are used by professionals, they are perfect for absolute beginners. Auto-accompaniment software creates an instant backing band for you to play along with. With *Band In A Box*, the most popular of the three and a *FORMAT* Gold award winner, all you need to provide is a list of chords – these could be taken from any songbook. Type the chord names in, choose a style of music (for example, rock, jazz, funk), press Play, and you instantly hear music. *Band In A Box* also comes with plenty of ready-made chord sequences and styles on disk, and enables new styles to be created by you. The new version (v5.0) creates accompaniments using five instruments. See the review of v4.2 in *STF* 29.

Next month we look at how to make music with your MIDI setup, with a complete sequencing tutorial packed full of hints, tips, ideas and shortcuts – all designed to get you well on your way to the untold glamour and riches of world megastardom! *stf*

WHAT ALL THAT MIDI JARGON ACTUALLY MEANS

AFTERTOUCH see Pressure Sensitivity.

CHANNEL MIDI has 16 channels – in other words, it is capable of communicating with 16 instruments at once, if necessary. Think of it as being like the number of lines available in a telephone system. Multitimbral instruments can respond on more than one channel at a time, so for example, you might choose a piano sound for channel one, a bass for channel two and so on. By using the software to switch between channels, you can select different sounds as and when required.

CHORUS An optional special effect found on some keyboards and sound modules which enriches the quality of a sound.

DRUM EDIT Found on many sequencers. A way of making and editing drum patterns on-screen using a method similar to that found on the LCD displays of good drum machines.

MIDI Musical Instrument Digital Interface. This is a kind of code which enables synthesizers to "talk" to each other and to computers. The technical aspects of MIDI seem like quite a minefield at first, but many MIDI musicians get along perfectly well without having the faintest clue how it works. Good music software enables you to make music without having to worry about the complexities of different MIDI data types.

MULTITIMBRAL A multitimbral instrument is one that can make more than one type of sound at the same time. The number of "parts multitimbral" is the number of different types of sound that it can play simultaneously.

PATCH Any particular sound on a synthesizer is

called a patch. The term comes from the early synthesizers, when to create a sound you had to connect a number of wires into an electronic patchbay.

PAN A pan control enables an instrument or sound to be positioned in the stereo "image," so that it seems to come from a certain place between the two speakers.

PIANO-ROLL EDITING A feature of any sequencer worth its salt, although the manufacturer will usually call it something else, like Key Edit, Grid Edit, Matrix Editor, or even *TIGER* (The Integrated Graphic Editor – one of Dr T's). This form of editing is easy to understand and use – even if you're not a musician. It's like a graph, with a piano keyboard displayed along one axis, and time along the other. Notes are represented by little rectangles (or sometimes other shapes) which can be clicked on, moved and generally messed about with.

POLYPHONY The polyphony of an instrument is the number of notes it can play at the same time, whether or not they use the same sound. This is not to be confused with multitimbrality, which is to do with types of sound. For example, an 16-note polyphonic, eight-part multitimbral keyboard could play a chord consisting of 16 notes all using one sound, or it could play single notes or chords using several types of sound at the same time, provided that no more than eight types of sound are used simultaneously, and the total number of simultaneous notes does not exceed 16.

PRESET SOUNDS These are sounds on a synthesizer that are already made for you and can be accessed just by pressing a button. Most of the cheaper keyboards consist of preset sounds only, and don't enable you to create origi-

nal sounds of your own.

PRESSURE SENSITIVITY On some keyboards you can register changes in the amount of pressure that you are applying to a key which you are holding down. Pushing on the key makes the sound get louder or change in some other way. This is also referred to as "aftertouch." See also "Touch Sensitivity."

SCORE EDIT A method of making adjustments to your music via traditional music notation displayed on-screen.

SYNTHESIZER A keyboard or module that enables you to create your own sounds, as opposed to one which relies only on "preset" sounds.

TOUCH SENSITIVITY A touch-sensitive keyboard plays louder when you hit the keys harder. Also known as "velocity sensitivity," because it is actually the speed at which the key is pressed that determines the loudness of the note. See also "Pressure Sensitivity."

TRACKS The number of tracks a sequencer has does not affect the number of channels available over MIDI, which is always 16. But it's sometimes useful to have more than 16 tracks, because although a piano only makes one type of sound and therefore only requires one MIDI channel, you may want to record the left hand and the right hand separately – this would take two tracks. Furthermore, you might wish to record every single drum sound separately, and although all drums are normally found on one channel, you need a separate track for each drum if you want to be able to control them individually.

VELOCITY SENSITIVITY see Touch Sensitivity.

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TRADING STANDARDS GONE MAD?

I'm writing about the News item you ran in *STF* 34. It worries me that, in the end, it will be illegal to feature sampled music or digitised graphics in demos. Many Public Domain libraries will go to the wall and programmers like myself won't bother to program demos – what's the point if no one else is going to see them?

It does no harm to sample slices of music and, as you said, bands do it all the time. I released a small STOS demo, *Demo With No Name*, which was reviewed in your magazine and featured samples from *Monty Python*. I did try and get permission to use them but I

Feedback

It's that time of the month again – time for you to get your views across to the entire ST world, listen to what the Editor thinks about all matters ST and get all hot and bothered about what people are or aren't doing. If you've got anything to say, write to The Editor, Feedback, *ST FORMAT*, 30 Monmouth Street, Bath, Avon BA1 2BW

received no reply, so rightly or wrongly I took this as permission to use them. I also try to get permission for any digitising I do, be it from TV or films, but half the trouble is that TV companies don't have a clue what you're on about, and finding out who you need to write to is a lot of trouble.

We should be allowed to sample music and digitise pictures and credit the source of the work. This gives credit where it's due and advertises the full thing. If people like the music in a demo, they then know what it's called and who wrote it, so they can buy it.

I hope this situation can be resolved quickly, without harming the PD writers and libraries. I purchase a lot of

PD, most of it demos, and if samples and digitised pictures have to be removed I'll stop buying PD – as I'm sure many other people will do.

Darran Taplin, Brenchley, Kent

stf: At the time of writing, the Southwest Software Library is still embroiled in a legal minefield over this very subject. The quality of this kind of stuff is so poor that no-one in his right mind would buy demos in preference to the real – and full – thing. As you say, it acts more as a useful sales tool than anything, and bands sampled for use in PD demos should see them as such.

Finding out who owns the rights to certain samples is as much of a prob-

lem for demo writers as it is for musicians who re-release old songs. The difference is that neither the demo writers nor the PD libraries make any profit from their use of samples. Now that the Dorset Trading Standards Department has suddenly perked up and taken an interest in this subject, it also needs to make a firm and considered judgement on the matter. Musicians should be consulted and shown these demos and, if they see them as an advert for their work and aren't concerned, then PD libraries should be left alone. There's certainly no sense in singling out the Southwest Software PDL for attack, especially considering that demos form such a tiny part of their collection.

COME ON, GAMES PUBLISHERS – NO MORE EXCUSES!

In issue 34 we started a campaign for more ST games. Those of you who felt sufficiently incensed that games publishers are choosing to ignore the ST filled out the coupon and duly posted it off to the various software publishers. Here at *STF* we've been getting the flak from publishers who are whinging that it now takes them three times as long to get through the post each day. Good! Maybe now they'll realise that there's enough ST games players out there to justify releasing more of the top games. If you haven't made your voice heard by now, then do so – it's only by enough of us getting together and shouting that we can make things change.

Here are the people you need to write to if you haven't done so already:

Bob and John Madden's American Football
Electronic Arts, Langley Business Centre, 11 – 49 Station Road, Langley, Berkshire SL3 8YN.
☎ 0753 549442.

Civilisation and F-117A Stealth Fighter
Microprose Ltd, Unit 1, Hampton Road Industrial Estate, Tetbury, Gloucester GL8 8DA
☎ 0666 504326

Life and Death 2: The Brain
Mindcape International Ltd, The Coach House, Hooklands Estate,

Scaynes Hill, West Sussex RH17 7NG
☎ 0444 831761

Sim Ant
Ocean Software Ltd, 6 Central Street, Manchester M2 5NS
☎ 061 832 6633

Eye of the Beholder, Eye of the Beholder 2, Secret of Monkey Island 2 and Secret Weapons of the Luftwaffe
US Gold Ltd, Units 2/3, Holford Way, Holford, Birmingham B6 7AX
☎ 021 625 3366

Some of your responses:

● I have been eagerly awaiting the ST version of *John Madden's American Football* and I wrote to the publishers, Electronic Arts, to ask when the ST version would be available. I was annoyed by their reply that, because of the poor sales of the ST in the United States, they had no plans to do the conversion. I thought it unfair that we should miss out on this game just because the Americans had not bought enough STs, so I wrote back pointing out that gridiron is a popular sport in Canada and Europe, particularly Britain and Germany, and asked them to reconsider.

I enclose a copy of their reply. Not only are Electronic Arts failing to support the ST market with their top programs, but once their current projects are completed they will fail to support the ST with any software. I find their greed amazing.

Surely the important point is not that an ST version will not make as much profit as the Amiga version, but that it will make a profit.

How much does it cost to convert a program anyway? The game is already written and working, so I would have thought that either Electronic Arts or the programmers themselves would have routines from previous projects, making the conversion relatively straightforward. This is money for old rope.

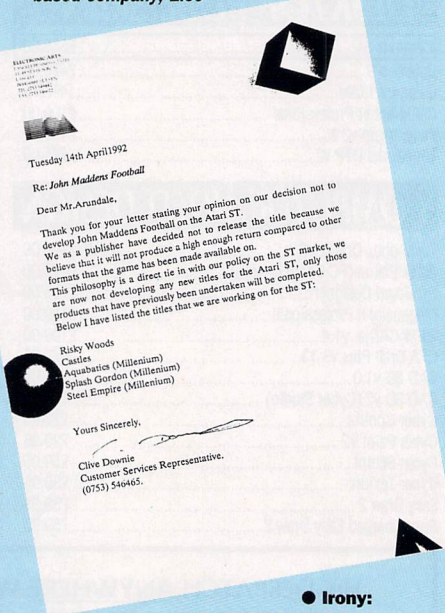
I hope there is a good response to your campaign to make publishers see the light. While their primary objective may be to make a profit, they should also consider the service they provide. When the ST and Amiga join the 8-bit micros as yesterday's technology and are replaced by new machines. I for one shall remember the shabby way they are treating us now and shall boycott them in future.

Good luck with the campaign.

Richard Arundale, Alwoodley, Leeds

stf: The ease with which a program can be converted to the ST often depends on the language it's written in. American programming tends to favour C as a language because it's easily portable. In America the PC is the dominant market, so games tend to be written in C on this format and then converted later. The conversion process is extremely straightforward, requiring little more than a couple

of weeks' work. Eye of the Beholder was written in C and it infuriated me that UK distributors, US Gold, never pushed hard enough to get it converted to the ST. However, even programs written in assembly language can be converted without too much effort. Being an American-based company, Elec-



● **Irony:**
when words imply the opposite of what they normally mean – for example: the term "Customer Services" in the letter from EA above.

THE POSTMAN NEVER KNOCKS!

From Bill Pointon, Psychotech,
48 Queen Street,
Exeter, Devon EX4 3SR

I write in answer to all ST owners who write to you complaining bitterly about the lack of opportunity for involvement within the software industry. In April, I advertised in your magazine for ideas, programs, screens, music, utilities, software and so on. The response we received was utterly underwhelming. Where were the massed ranks of user programmers, artists, musicians, games designers and utility writers?

Perhaps they were writing letters to magazines saying: "Why, oh why do software houses ignore the paying public? They don't want to know what we want, they are not interested in us or our ideas." To be quite frank, I feel like hyping a game of small green blobs moving round a static screen dodging small red blobs moving in a predictable fashion in BASIC – and charging you all £35.00!

Anyway, to recap, we offer, in return for a small fee of £4.60, a full professional appraisal of submissions and the opportunity for help in developing, writing and marketing the most suitable of them for sale in a manner by which the authors receive a decent amount for their efforts, and help, advice and

support to bring less suitable programs to a more marketable status. If anyone's interested, please write to me.

stf: Keep me informed of any good ideas you get, Bill. I'd be interested to know what people come up with.

RETAILERS ON THEIR HIGH ROCKING HORSE

For some considerable time now, people have been writing in complaining about the prices retailers charge compared with the mail order firms, and the lack of try-before-you-buy facilities offered by retailers. As an ex-retailer, I feel a few facts should be stated.

1. The typical discount offered to a small retailer is roughly 33%. This may sound a lot to some, but, as you rightly pointed out, the overheads easily eat into that. Our outlet used to sell computer games at between 10 – 15% off the retail price. At least, we did until the accountant put a stop to it because we were in danger of committing financial suicide if it went on for too long. The mail order companies, however, place much larger orders more regularly than retailers, so they can obtain large discounts – typically 45% upwards. Also, they have your money up front, which also helps to keep down the overheads, and some even charge for postage and

THOSE ADDRESSES IN FULL

To be sure your letter gets attention, make sure you send it to the right address. To help you get it right, here's a list of our sections

FEEDBACK

Write here if you want to get anything that's annoyed you about the ST scene off your chest or if you want to reply to any of this month's letters. Life could feel so much better afterwards – especially if you win some cash! Address your letters to The Editor, Feedback, *ST FORMAT*, 30 Monmouth Street, Bath, Avon BA1 2BW.

TECHNICAL QUERIES

Having problems getting your ST to work? Do you keep getting bombs appearing on-screen when you're using a particular software package? If you have any techie problems, fill in the coupon on page 62 and post it to ST Answers, *ST FORMAT*, 30 Monmouth Street, Bath, Avon BA1 2BW. We only guarantee to answer queries if they're sent to this address on

a coupon. Remember, if your problem isn't answered, we may have covered it in a previous month. There's up to £50 up for grabs too, if you send a technical tip to the same address.

GAME TIPS

If you know any ways in which you can improve your game playing – with hints, tips, passwords or maps – write to Gamebusters, *ST FORMAT*, 30 Monmouth Street, Bath, Avon BA1 2BW. You could win up to £50!

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packing, which they then claim back as business expenses. Contrary to what seems to be a popular belief, software is not supplied by wholesale distributors on a sale-or-return basis – once you've bought it, you're stuck with it.

2. We tried the try-before-you-buy idea for about six months. It just doesn't

work. The shop was packed at lunch-times and school holidays with "children" playing the games, which led to the regular purchasers complaining they couldn't get in or complaining about the noise and bad language. This affected our sales, so we stopped.

We then tried to obtain demo disks from the distributors. ST demo disks appear to be as rare as the proverbial rocking-horse crap. Very few were forthcoming from the distributors, and most were surprised when we asked for ST disks. Also, on many occasions, we found out that customers who had come in to try out a specific game, with a view to buying, then went out and bought it through mail order. Perhaps I should have set up a bureau for the mail order companies, where their prospective customers could try out the games free before placing orders with them. All in all, it turned out to be an expensive failure and all we had to show for it in the end was a couple of used computers and monitors.

3. And then there's the old chestnut about returning the games because they weren't good enough. I can sympathise, because, like most people, I have a few crap games sitting on my shelf at home. It's no good complaining about games to the retailer – he didn't produce them. We tried to be objective about it and came up with a reasonable system, but I'm afraid that there were still a lot of people abusing the system by copying the game and then bringing it back. After a while you can suss them out and deal with these people, but the clever ones take longer to detect. And you would be surprised how violent some people get when you prove them wrong – and all over a computer game. They are, of course, in the minority, but they were on the increase when I got out of retailing, especially as money got

tronic Arts have little commitment to the ST games scene in the UK. What's even more distressing is that the UK arm of EA handle games from programming giants like Bullfrog. Now that they've chosen to extend this US axiom to their British titles, there seems to be no bright spark in the EA stable. There's certainly little doubt that ST releases of games like Bob could still make them money.

● The main theme of your article "We want more ST games" in *STF* 34 is that many of the major software houses won't convert games to the ST, on the grounds that they may not sell well.

I'd like to suggest a possible solution to the software houses. If they converted the games to run on STs and then only produced a limited number, they could reduce their costs and research the market for the games by selling them direct to customers using some sort of mail order service.

They would be seen to be supporting the ST, they would cover their costs and sooner or later they would have a fair idea of what type of ST games sell best.

D T Dowell, Harrogate, N Yorks

stf: Games publishers don't know how many copies of a game they're going to sell until they've actually made a big investment and put the game onto the market. Converting a game, making the packaging, advertising it and then persuading shops to stock it can be a costly business. The big software publishers are

so geared up to heavy and expensive promotional campaigns that they often don't try to find a cheaper way to get games on the shelves and consider a market is dead rather than no longer as profitable as before. In a recession, publishers – like everyone else – are even less inclined to take risks. The purpose of this campaign has been to prove to the publishers that certain types of games sell well, rather than encourage them to take risks with games which they can convert relatively cheaply. A mail order scheme might be relatively inexpensive to operate, but without the exposure for big titles they're unlikely to sell enough copies of good games to make them think the ST market is worth the investment.

Mail order can also begin to kill a market very quickly. When game-players begin to buy software more cheaply through mail order, the big stores stop selling the games. When people make a decision about which machine to buy, they cite the fact that there are no games on the shelves as a sign that the machine can't be popular and buy something else instead.

● I was intrigued by the reply to a letter in *STF* recently on the subject of *Advanced Dungeons and Dragons* conversions by US Gold from theSSI originals. I am an avid AD&D player and awaited the conversion of the role playing games. I even put an order in for *Pools of Radiance*, the first role playing game in the series, only to be told ten months later

that no such conversion was to be made.

Undaunted by this, I purchased the conversion of the second game in the series, *Curse of the Azure Bonds*. From the recent reply from US Gold, it looks like this is the only game that is ever going to be converted. This situation is ridiculous – it's like an author announcing a trilogy, not writing the first book, then saying that sales of the second book were poor, so there will never be a third book!

One of the best features of role playing games is that your characters can be transferred from earlier games to more recent games, developing as they go. My *Curse* characters are not going to be able to do this and I'm wondering whether to just format the disk. US Gold's reply that they are to decide further conversions upon the sales of *Shadow Sorcerer* is crazy – *Curse* is a role playing game and *Shadow Sorcerer* is an arcade game!

Surely a conversion would be fairly easy. We ST owners relish games such as *Eye of the Beholder* – witness the sales of *Dungeon Master*. I hope US Gold reconsider their position.

C J Whiteman, Baxenden, Lancs

stf: Madness reigns and all ST gamers get wet! You're absolutely right and it just goes to show that whoever makes these kinds of decisions at US Gold doesn't bother to examine the game style – they only pay any attention to the sales figures. It's a sad day for all game-players – whatever machine they use!

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SHORT BUT SWEET – AND THAT'S ONLY THE ADJECTIVES

I felt the need to write after reading your reply to Mr Maurice's "short but sweet" letter in STF 34. There may well be few of us single-sided disk drive owners left, but don't forget that we bought our STs when the machine first came out. We spotted a good machine and got the market going. What thanks do we get? Everything goes double-sided! How am I supposed to afford a new drive on a student grant? Go sober? Now, would you recommend replacing the internal drive or buying an external one?

Chris Bradshaw, Stafford, Staffs

– I don't forget that early ST owners got the market up and running, but then early ST owners are some of the most enthusiastic and so would have upgraded long ago. I bought my first ST over four years ago and upgraded the internal drive when internals cost as much as £100! It would all seem a waste of money if no-one did anything with the other side of the disk. I'd recommend replacing the internal drive, especially if cash is tight. You can pick up a second drive for as little as £35 now – I wish I'd

waited. Contact Power Computing on ☎ 0234 843388.

I have a 1040 ST Family Curriculum pack and, although I've spent hours trying to get it to work, I can't. The only part I need is the word processor – I've spent £300 on a printer, but I haven't even been able to type a letter yet. Is there anyone locally who could spend a day with me explaining how the word processor part works? I'm desperate to learn, but totally confused.

Elaine Matthews, St George, Bristol

– Contact any of the computer shops in your area and ask for help. Even if they don't provide specific technical assistance, many have enthusiastic regular customers who may be able to help. You could try one of the training courses widely advertised in local and national papers, but you often end up spending a lot of money to sit in a large crowded classroom – try to find someone who can personally recommend a course. Have you tried using Write On, which we gave away on STF 34? Our

step-by-step guide in the two issues which followed should make things clearer – see page 64 if you missed it.

I accept that the quality of the gear you have on your Cover Disks is good, but who says all your readers want GFA Draft, Write On or any other things you've put on them? Perhaps you could include a space on the reader survey form to ask what the readers want to see on the second Disk.

Kevin Webb, Congleton, Cheshire

– One of the questions on our Reader Survey form below asks what you like most about the issue. Most of those returned indicate that the content of the Cover Disks is their main reason for buying the magazine. Take a look at this month's form and you'll see that, as a result of your letter, I'm now inviting readers to tell me what they think of the second Cover Disk specifically. Suggestions are always welcome.

I've just finished Starglider 2 and can find no other good mono games. I've tried all

the usual PD games and nothing compares. Why don't more games run in both mono and colour?

Neil Elliot, Luton, Beds

– Try Lucasfilm's Secret of Monkey Island (STF rating: 94%), which runs perfectly in mono, Neil. Games tend to be created with colour in mind and it's a lengthy process to convert them to mono, but for a roundup of mono-compatible games check out STF 30.

Intro Designer (STF 34) doesn't even start to load samples that are any longer than 300K. Even with my 520STFM, I have enough memory to load this size of sample into memory. It works well with short samples, but not with 300K ones.

Brendan Watt, Aberdeenshire

– You don't have enough memory in your ST to run a 300K sample. Although your ST has 512K of memory, a large chunk of this (up to 180K or more) is taken up by GEM before you even load Intro Designer. See last issue's cover feature for all you need to know about upgrading your memory.

→ tighter because of the recession.

C M Hewish, London SE26

stf: It's a wonder anyone sells ST games in the High Street if your experiences are anything to go by. Perhaps there should be better ways to push the benefits of High Street computer stores – they're reliable, they're still there if you get your game home and find it doesn't load, and you can walk away with your software there and then. The blame for a lack of demos lies with the software producers, but retailers carry a lot of clout and can encourage the producers to bring out demos. Demos like those on STF's Cover Disk could be run on machines in the store, but it's difficult to see any way around the problem of people using High Street stores to sample the games before buying them via mail order. The blame for useless games lies fairly and squarely with the software producers who push themselves into a corner with over-optimistic scheduling. If retailers could try games before stocking them, then this might go some way towards minimising the risk of bad games being left on the shelves.

Thanks for your letter – I'm sure we haven't heard the last of this subject yet.

FALCON TAKES OFF AFTER ALL

I have a 1MByte STE and had the same problem as Dave Edwards (STF 34) when trying to run F16 Falcon – the second disk refused to load. I found that I could get around this by switching disks in the drive before the prompt to insert the second disk came up. This is not as dodgy as it sounds because the drive actually stops running for about 15 seconds at this point.

The only problem with this is that the all sound files don't load properly, so you get a high-pitched whine instead of the raunchy jet engine. You can overcome this by copying the sound files from disk one onto disk two.

I cannot guarantee that this works on any other TOS version – or any

other STE, come to that – and will not be held responsible for any disasters that this fix might incur!

Tim Jones, Cheltenham, Glos.

stf: Thanks, Tim. If anyone else has this problem, please don't attempt to copy the files from one disk to another

unless you know what you're doing – ST FORMAT can't be held responsible if you damage your game disks.

Want to get something off your chest? Write to The Editor, Feedback, ST FORMAT, 30 Monmouth Street, Bath, Avon BA1 2BW.

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Buyer's guide

Read last month's Buyer's Guide yet? Good, because here's this month's: with all the info you need about every bit of hardware, software, books, miscellaneous gadgets and useless widgets we've ever reviewed for the ST. Read it straight through and no skimping on the Utilities, now – we'll be asking questions later

**OVER 200
HARDWARE AND
SOFTWARE ITEMS
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SOFTWARE

ART AND GRAPHICS

With a palette of 512 colours on the ST and a palette of 4,096 on the STE, it's hardly surprising that art software has boomed ever since the first days of the ST. All of those programs listed here, except *Retouche*, come with the basic tools – different brush sizes, an airbrush tool, cutting, pasting and magnification. If you've got an STE, try to make sure your art program supports the extra colours like *Canvas* does, which we gave away on Cover Disk 34.

Art Master ST £29.95
Laser ☎ 0579 82462
Reviewed: 35 STF Rating: 76%

An easy to use drawing program offering support for the 4,096 colours of the STE. Enables you to wrap blocks round user-defined shapes, and has the other usual functions.

Canvas Cover Disk 34
Microdeal ☎ 0726 68020
Reviewed: 9 STF Rating: 94%

A fully featured graphics package with support for the STE's enhanced graphics capabilities. A clever 3D modelling section enables you to create 3D shapes and use them in your pics.

Cyber Paint 2 £58.70
Electric Dist ☎ 0480 496666
Reviewed: 24, 30 STF Rating: 88%

A drawing package with all the features of other graphics packages. Includes a unique animation section so you can define the start and end of an animation and then leave your ST to work out the intermediary frames.

Cyber Studio £58.70
Electric Dist ☎ 0480 496666
Reviewed: 30 STF Rating: 79%

A 3D modelling studio which consists of a set of programs enabling you to create your own 3D objects and then illuminate them from a wide variety of angles and in a selection of different shades.

Degas Elite £25.99
Electronic Arts ☎ 0734 794941
Reviewed: 30 STF Rating: 90%

One of the original ST graphics packages and still highly praised. Good budget package with all you need to create standard pics. No support for the enhanced STE palette.

Deluxe Paint £59.99
Electronic Arts ☎ 0753 549442
Reviewed: 15, 19, 24, 30
STF Rating: 88%

Has all you need to create pictures but it's not as simple to use as packages like *Degas Elite* because of the awkward lay-out of its menus. Limited animation is possible and has some interesting techniques like Bezier curves and stencilling. Support for all the STE's 4,096 colours.

GFA Draft Plus 3.0 Cover Disk 34
GFA £100 ☎ 0734 794941
Reviewed: 19 STF Rating: 90%

A sophisticated 2D Computer Aided Design drafting package to help you plan everything from a spacecraft to the look of your bedroom.

GFA Raytrace Cover Disk 35
GFA ☎ 0734 794941
Reviewed: 3 STF Rating: 78%

Do you want to give your pics a new realism? Raytracing enables you to simulate light hitting solid surfaces. This is used to generate those shiny balls in so many PD demos.

Outline Art £176.25
Halco ☎ 0734 441525
Reviewed: 6 STF Rating: 95%

If you want to get the best out of *Calamus*, the DTP program *O Line* enables you to generate fancy logos by manipulating existing fonts and pics to give curved and 3D type effects. V2 of *Outline Art* is out for the new colour *Calamus SL* program.

Paintpot £14.95
Switchsoft ☎ 0325 464423
Reviewed: 35 STF Rating: 72%

This must be one of the easiest-to-use art programs for the ST. Although it lacks any animation features, it has a few unique capabilities and it is STE compatible.

Quantum Paint 2 £14.99
Power ☎ 0234 843388
Reviewed: 4 STF Rating: 79%

Using some very clever techniques, this drawing program enables you to have up to 4,096 colours in your pictures. Unfortunately, it's slow and difficult to use.

Retouche £175.00
CopyCare ☎ 081 686 8121
Reviewed: 21, 30 STF Rating: 81%

A retouching program for use with scanned images. Instead of the usual drawing tools, you have functions like charcoal, brush and water. High res only.

Trip A Tron £20.00
Llamasoft ☎ 0734 814478
Reviewed: 24 STF Rating: 91%

Not an art program in the traditional sense, but it certainly enables you to create some mind-teasing kaleidoscopic patterns. Using its own programming language, you can create cosmic colourful creations. Tricky to master at first but very versatile. Unique!

BUSINESS

Business programs come under three main categories: spreadsheets, databases and accounts programs. Spreadsheets are used to analyse information. They're very useful for assessing the results of questionnaires or performing "what-if" tests on your budget. Instead of analysing, databases store information like people's names and addresses. Many video libraries use databases to store information about the videos rented by people. Accounts packages are different again. These are used to keep track of income and expenditure. A good accounting package can also keep track of your VAT demands.

Adimens £121.30
Kuma ☎ 081 309 1111
Reviewed: 28 STF Rating: 70%

A very powerful relational database. It's very straightforward and logical to use.

Cashbook Combination £79.99
Digita ☎ 0395 270273
Reviewed: 28 STF Rating: 80%

Enables you to balance your books to trial balance stage. Also enables you to keep track of profits and loss and bank transactions. Balance sheets can be created.

DGBase £49.99
Digita ☎ 0395 270273
Reviewed: 28, 31 STF Rating: 71%

Useful only if you have fairly modest database requirements. Designed to be useable with other Digita business packages. Only 64 fields of 255 characters can be used.

Home Accounts 2 £54.99
Digita ☎ 0395 270273
Reviewed: 28, 31 STF Rating: 90%

Aimed at the home user, this accounts package enables you to keep track of incomings and outgoings. Vastly improved from *Home Accounts 1* and far easier to use, as well as being presented very nicely.

Informer 2 £56.74
Soft-Aware ☎ 0101 714 9828409
Reviewed: 23 STF Rating: 79%

This American program is an easy-to-use database; you can incorporate graphics in the form of *Degas* pics, but there are plenty of cheaper home grown alternatives.

K-Spread 4 £136.30
Kuma ☎ 0734 844335
Reviewed: 19, 28 STF Rating: 80%

This popular spreadsheet comes with all you'd expect from a high-end package – including a very helpful manual. Graphics can be imported into documents and a vast range of statistical and trigonometrical functions can be applied to your information.

LDW Power £114.95
Silica ☎ 081 309 1111
Reviewed: 28 STF Rating: 84%

This spreadsheet is extremely simple to use, made all the easier by a good manual. Can generate a range of different graphs to analyse your information.

Mini Office Communication £21.95
Silica ☎ 081 309 1111
Reviewed: 28 STF Rating: 71%

This comms module facilitates the logging on to the many on-line services – if you have a modem!

Personal Finance Man. Plus £39.95
Michtron ☎ 0726 68020
Reviewed: 19, 28 STF Rating: 81%

Helps the home user or small business handle all every accounting need – many useful features. See the demo on STF Cover Disk 18.

Personal Tax Planner £49.99
Digita ☎ 0395 270273
Reviewed: 28, 31 STF Rating: 74%

An interactive tax advisor, it asks the questions, you provide the answers. It helps with creatively filling-in your tax return form.

Prodata £99.88
Arnor ☎ 0733 68909
Reviewed: 7, 28 STF Rating: 74%

You need 1MByte of RAM to run this powerful database program, and it's fully compatible with *Protext*. The latest v1.2 uses friendly GEM-like menus.

ProShare ST £49.95
TC Devel'ts ☎ 0937 591145
Reviewed: 15, 28 *STF* Rating: 69%

A dedicated Shares database, monitors the progress of your investments and shows you that they can go down as well as up. Useful either as a warning or as an educational tool.

Superbase Personal 2 £112.12
Oxxi ☎ 0753 551777
Reviewed: 19 *STF* Rating: 91%

All-singing and dancing database program, intuitive VCR-like controls, copes with anything the home user requires. Can be upgraded to the Pro version.

Superbase Pro £255.39
Oxxi ☎ 0753 551777
Reviewed: 28, 31 *STF* Rating: 86%

Wow, this is a bit pricey for an ST program, but it is rated as one of the best all-round relational databases for both private and business use. Enables you to store graphics and text.

System 3 £59.95
Digita ☎ 0395 270273
Reviewed: 11 *STF* Rating: 90%

Dead easy to set up, this is ideal for the small business. It produces professional-looking invoices, statements and so on for up to 99 customer accounts.

DESKTOP PUBLISHING

To give your words a professional look, you need to present them in the right way. Using desktop publishing programs, you can take words created in a word processor and lay them out in an eye-catching and imaginative manner. DTP programs are used to design the pages of magazines like these, to create letter headings, posters, party invitations, flyers and more besides. The more advanced DTP programs like *PageStream 2* can import colour screen pictures and use these in your pages. Inevitably, the quality of the printout depends on the quality of your printer. All DTP programs print pages using the graphics features of a printer, so for the best quality output, you need an inkjet or laser printer.

Calamus £139.95
Halco ☎ 0734 441525
Reviewed: 6, 30 *STF* Rating: 90%

The first DTP package aimed at high-end publishers. This mono only v1.09 has all the usual features plus the ability to run text around odd-shaped pictures and extensive text editing features. You need 1MByte of RAM and a high res monitor.

Calamus SL £587.50
Halco ☎ 0734 441525
Reviewed: 37

The colour version of *Calamus* is now available, and it improves on the capabilities of v1.09 plus supports colour separations. Very memory intensive, and a hard disk is necessary for large colour images.

Easy Text Plus £20.00
zzSoft ☎ 0254 672965
Reviewed: 30, 31 *STF* Rating: 68%

The cheapest DTP program on the market. It lacks the frills of its big brothers, but is still a worthwhile introduction to desktop publishing. A demo of *Easy Text Plus* is available from the Public Domain, check our listing of libraries on page 48.

Fleet Street Publisher 3 £184.00
Silica ☎ 081 309 1111
Reviewed: 6, 28, 30, 3
STF Rating: 76%

Has all the features – including picture runaround, graphics commands and image import functions – that you'd expect from a high-end desktop publishing package, though it's not easy to use. Capable of superb printing using the Ultrascript module. Overpriced.

PageStream 2 £169.00
Silica ☎ 081 309 1111
Reviewed: 28 *STF* Rating: 95%

The first ST DTP package to support colour pictures – easily the best value and most versatile package available. Picture runaround, text handling facilities and a wide range of picture formats supported. Produces excellent output on the lowliest dot matrix printer.

Timeworks Publisher 2 See page 94
Electric Dist ☎ 0480 496666
Reviewed: 32 *STF* Rating: 88%

The follow-up to *Timeworks DTP*. To run text around pictures, simply define your own outline around the image and the text flows around it. No support for colour. Easy to use, good printer support. Pretty quick screen redrawing.

EDUCATIONAL

There is a proliferation of educational software for the ST. The vast majority of it is aimed at the under 10s. Many packages, like *Fun School 3* for instance, are available for different age groups. Be careful not to invest in packages which look good and intrigue your children, but offer no educational benefits.

Better Maths £22.95
School Software ☎ 010 35 361 41539
Reviewed: 29 *STF* Rating: 53%

Ages 12-16. A comprehensive tutorial and testing program, 9but one which is too wordy and actually pretty boring. Buy it only if you're allergic to textbooks, since there are no other advantages to it.

Count and Add £25.99
and Scetlander ☎ 041 357 1659
Reviewed: 30 *STF* Rating: 82%

Ages 4-7. Focuses on how to help your child learn to count and add up. Colourful and generally friendly. Good value both educationally and financially. Interesting, well-thought out, and puts the parent (or teacher) firmly in the driver's seat.

Death of a President £4.95
Goodmans PDL ☎ 0782 335650
Reviewed: 32 *STF* Rating: 80%

Aged 11 upwards. Excellent open-ended three disk learning package on the assassination of JFK. Includes a photographic and audiographic database as well as an adventure game *A Day in Dallas*. Extremely interesting with lots to explore.

Donald's Alphabet Chase
Mickey's Runaway Zoo
Goofy's Railway Express
Nathan Software ☎ 0268 541212
£24.95 each
Reviewed: 26 *STF* Rating: 58%

First Letters £7.99
Rainbow ☎ 0392 77369
Reviewed: 28 *STF* Rating: 67%

First Maths £2.50
ST Club ☎ 0602 410241
Reviewed: 29 *STF* Rating: 75%

Fun School 4 £24.99 each
Europress Software ☎ 051 357 2961
Reviewed: 31 *STF* Rating: 91%

Henrietta's Book of Spells £24.99
Scetlander ☎ 041 357 1659
Reviewed: 28 *STF* Rating: 92%

Junior Typist £16.95
School Software ☎ 010-35 361 415399
Reviewed: 30 *STF* Rating: 78%

Ages 4-10. Apart from the rather boring presentation, not a bad typing tutor, with interesting activities like *Space Invaders* style typing and spelling games. Pretty good value.

Magic Story Book £29.95
Softstuff ☎ 0732 351234
Reviewed: 28 *STF* Rating: 87%

Age: pre-school upwards. A complete creativity package – write a story, illustrate it with animated pictures, and add sound effects. A must for anyone with an ounce of creativity.

Memory Lane £24.99
Ablac ☎ 0626 332233
Reviewed: 27 *STF* Rating: 64%

Ages 2-6. Package to help children learn to discriminate between shapes through five different sorts of matching game. Needs to be supplemented by other maths edsoft.

Mix and Match with Maggie £24.99
Scetlander ☎ 041 357 1659
Reviewed: 34 *STF* Rating: 75%

Age: under 5s. A good shape-recognition package containing exercises designed to develop the sort of skills you need before you can add and subtract. Scope for parental input.

Moon Letters £3.95
Shoestring Software ☎ 0792 649060
Reviewed: 28 *STF* Rating: 67%

Age: under 5s. A spelling game styled along the lines of a shoot-'em-up where the aliens are letters. You get a lot of control over the words used. Well worth buying.

Money Matters £19.99
Triple R ☎ 0742 780370
Reviewed: 33 *STF* Rating: 52%

Age range: very young. Brilliant graphics, and a keyboard overlay to help your offspring to learn about money through three games.

My Letters, Numbers & Words
£24.99 Ablac ☎ 0626 332233
Reviewed: 27 *STF* Rating: 67%

Age: 2-6. Helps kids to recognise letters and numbers, as well as keyboard familiarisation. Does what it does well, but it doesn't do that much.

Pepe's Garden £25.99
Prisma ☎ 0244 326244
Reviewed: 32 *STF* Rating: 72%

Age: 3-7. Similar to the *Fun School* range in many respects, the difference being that this has more "fun" but less "school." Better suited to the lower end of the target age group. Superb graphics and sound.

Picture Book £19.95
Triple R ☎ 0742 769950
Reviewed: 34 *STF* Rating: 68%

Age: 2-5. Consists of four different pre-school exploration type games, this package can be seen as an appetiser. Pretty good but there's more variety in *Fun School*.

Read Right Away £14.95
HS Software ☎ 0792 298283
Reviewed: 33 *STF* Rating: 73%

Age: 5-8. Not a bad reading tutor – there are good graphics and sound effects, and you have a bit of control over the type of words used. Good value for money.

Robot Words £3.95
Shoestring ☎ 0792 649060
Reviewed: 30 *STF* Rating: 82%

Age range: very young. A high-tech version of *Hangman* which knocks spots off some commercial edsoft. Colourful, with a facility to edit the word banks.

Shapes & Colours £7.99
Rainbow ☎ 0392 77369
Reviewed: 29 *STF* Rating: 81%

Under 5s. A colourful and imaginative package which draws on tried and tested techniques for teaching basic maths. Good value for money.

Shoe People £25.99
Gremlin Graphics ☎ 0742 753423
Reviewed: 35 *STF* Rating: 76%

Ages: 4-6. Six games to help your child with a variety of learning tasks based on sound educational principles. User-friendly with interesting sound effects.

MUSIC

Musicians the world over use the ST to create their masterpieces. As a result, there's a wide range of professional packages which have spawned a healthy selection of lower end-of-the-range programs ranging from straightforward sound-sampling to MIDI sequencing. To create music using MIDI, you need to invest in a MIDI device like a keyboard. These can be expensive, so low cost solutions like sound samplers and

sequencers are available. They usually comprise a hardware cartridge for "grabbing" the sound in the first place and a software package to manipulate it. Besides specific music programs, there are also related programs like scorewriting packages.

Band in a Box Professional £69.00
Zone Dist ☎ 071 738 5444
Reviewed: 29, 30 STF Rating: 94%

This reasonably-priced sequencer program generates auto-accompaniment to match your own song creation in a range of styles and tempos. Instant karaoke!

C-Lab Creator v3.1 £330.00
Sound Tech ☎ 0462 480000
Reviewed: 20 STF Rating: 92%

This top-of-the-range sequencer is not cheap, but it might be worth its weight in gold if it helped you produce a hit – many pros and studios use it.

C-Lab Notator Alpha £225.00
Sound Tech ☎ 0462 480000
Reviewed: 23 STF Rating: 85%

The cut-down version of the £499.00 *Notator*, this sequencer excels at producing printed score sheets of your ST-created music.

C-Lab Notator £550.00
Sound Tech ☎ 0462 480000
Reviewed: 30 STF Rating: 92%

This up-market version of *Creator* enables you to sequence your MIDI music and then produce professional quality printed score sheets, or import these as IMG files into a DTP.

Chameleon £89.00
Keynote ☎ 0761 432610
Reviewed: 7, 12 STF Rating: 85%

A useful Desk Accessory for MIDI maniacs with more than one synthesizer, this Librarian program can up-load, down-load and store your voice data for any synth.

EditTrack Gold £116.32
Atlantic Audio ☎ 071 272 8944
Reviewed: 30 STF Rating: 86%

This great value sequencer is so flexible, no two musicians use it in the same way. Can handle pattern based or linear based sequences, and has graphic editing.

Fractal Music Composer £65.00
Fractal Music ☎ 071 7385 5444
Reviewed: 28, 30 STF Rating: 85%

Fractals are mathematical formulae which can create unusual visual patterns – this program harnesses them to assist in the production of music and saves them as MIDI files from which you can replay it or carry out edits.

Freestyle pro £179.00
Zone Dist ☎ 071 738 5444
Reviewed: 30 STF Rating: 76%

Another auto-accompaniment sequencer like *Band In A Box*, but not as accomplished and much pricier.

SLAM sample librarian £89.00
Intrinsic Technology ☎ 081 761 0178
Reviewed: 34 STF Rating: 80%

If you have an Akai sampler, *SLAM* makes it easy to find any thing from a sample to a single sound in your collection. *SLAM* also enables you to print a disk label listing samples and even read sample data from an Akai disk.

MIDistudio Master £99.99
Ladbroke ☎ 0772 203166
Reviewed: 30 STF Rating: 91%

A well-received challenger to the expensive sequencers, this has many powerful features but suffers from one or two annoying little glitches.

MusICAL £29.95
Evenlode ☎ 0993 898484
Reviewed: 11 STF Rating: 90%

A music teaching program that takes the student through a range of activities using both MIDI and the ST's own sound-chip. Ideal for schools.

Quartet £49.95
Microdeal ☎ 0726 68020
Reviewed: 5 STF Rating: 94%

The simultaneous playing of four samples is possible with this software. Many samples are available enabling you to compose songs and play them with realistic-sounding voices.

Sequencer One Cover Disk 30
Gajits ☎ 061 236 2515
Reviewed: 8 STF Rating: 91%

This is a 32 track sequencer with a high level of recording accuracy and resolution. Comes with a full sound chip editor so you can play music through any ST, but if you have some MIDI gear, you can exploit its advanced music features.

Steinberg Cubeat £199.00
Evenlode ☎ 0993 898484
Reviewed: 17, 30 STF Rating: 89%

The more affordable version of *Cubase* – the £500-plus sequencer. Excellent visual editing, intuitive operation and a good manual make this a good pro package.

Trackman 2 £99.95
Hollis Research ☎ 0481 728286
Reviewed: 22 STF Rating: 97%

Amazingly highly scoring sequencer, fast, powerful, yet easy-to-use and packed with features. An optional foot pedal helps you to control it.

Virtuoso £299.00
Digital Muse ☎ 071 828 9462
Reviewed: 3 STF Rating: 88%

By not using GEM, this sequencer achieves great speed of operation with fast machine code.

PROGRAMMING

You're not limited to using the pretty awful *ST Basic* if you want to write a program. There are plenty of other languages out there – some more suited for games programming where others are biased towards more serious applications. *GFA Basic* is a pretty good bet for the novice, while if you want speed and flexibility at the expense of user friendliness, *C* is the language you want. For programming games, *STOS* is highly recommended.

C Interpreter £59.95
Hisoft ☎ 0525 718181

An ideal introduction to C, this interpreter enables you to make changes to your program and try them out straight away. Includes tutorials on GEM and the C language.

Devpac 2 £39.95
Hisoft ☎ 0525 718181
Reviewed: 30, 31 STF Rating: 95%

GFA 3 Compiler £30.00
GFA ☎ 0734 794941
Reviewed: 2 STF Rating: 91%

GFA Basic 3 £34.95
GFA ☎ 0734 794941
Reviewed: 30, 31 STF Rating: 95%

Lattice C £149.00
Hisoft ☎ 0525 718181
Reviewed: 30, 31 STF Rating: 87%

Power Basic £29.95
Hisoft ☎ 0525 718181
Reviewed: 30 STF Rating: 88%

Prospero Pascal £102.12
Prospero ☎ 081 741 8531
Reviewed: 30, 31 STF Rating: 95%

STOS Compiler £20.99
Mandarin ☎ 0625 859333
Reviewed: 1

STOS £29.99
Mandarin ☎ 0625 859333
Reviewed: 30, 31 STF Rating: 92%

Regarded as one of the most powerful assembly language development systems for the ST. Comes with an integrated editor/assembler/de-bugger and more.

Having written your *GFA Basic* program to run it as a "stand-alone" program, compile it into machine code with this utility.

Everything you need to write your own quality programs, including a comprehensive manual. A very fast, popular form of BASIC. A compiler to produce fast, small programs and an assembler are also available.

Said to be the best version of C available on the ST, and though it is powerful, it is not an easy programming language to master.

Being a compiled language, this enables you to generate smaller, faster programs than with normal BASIC interpreters. Compatible with *ST Basic* and *FaSTBASIC*.

Pascal is widely taught in schools and colleges, but is not popular on the ST. This version is the best implementation of the language for the ST and comes with very good manuals.

Having written your *STOS* game, the compiler produces a machine code version of it enabling it to run at high speed.

This game creator software is a specialised programming language much like BASIC, but optimised to handle sprites and GEM functions, play music or scroll the screen with extreme ease and speed. Well supported and popular.

UTILITIES

There are some programs you can't afford to be without, from useful Desk Accessories to save time switching between programs, to disk recovery programs – invaluable for salvaging lost data. Others are necessities – everyone should have *UVK*, and once you've used *Neodesk 3* you'll wonder why Atari didn't do the Desktop that way.

3D Constr'n Kit £39.99
Domark/Incentive ☎ 081 780 2222
Reviewed: 24 STF Rating: 95%

Art Tutor £25.00
Castlesoft ☎ 0333 421243
Reviewed: 21 STF Rating: 73%

Astronomy Lab £19.95
ST Club ☎ 0602 410241
Reviewed: 9 STF Rating: 90%

C-Font £9.95
The ST Club ☎ 0602 410241
Reviewed: 35 STF Rating: 88%

DC Desktop £20.25
Softville ☎ 0705 266509
Reviewed: 21 STF Rating: 71%

DC Utilities £25.00
Softville ☎ 0705 266509
Reviewed: 21 STF Rating: 85%

Edhak 2.25 US\$21.95
Clear Thinking
Reviewed: 35
Contact:
PO Box 715, Ann Arbor,
MI 48105, USA

Fastcopy Professional £24.95
The ST Club ☎ 0602 410241
Reviewed: 34 STF Rating: 83%

Flexidump Plus £39.95
Care/Zitasoft ☎ 0923 672102
Reviewed: 21 STF Rating: 84%

Fontkit Plus 3 £19.95
ST Club ☎ 0602 410241
Reviewed: 20 STF Rating: 90%

Features a fantastic and versatile range of tools for creating 3D games of your own. Comes close to DIY Virtual Reality. Manual and VHS demo video provided, too – if you actually watch the video, you'll find this dead simple to use.

An unusual package that teaches you to draw, on both the ST and on paper using a workbook type manual and three disks of exercises and programs. Good results are possible.

Study the night sky at any date in history and from any location on Earth, all on your monitor screen! A first rate program, with a large manual to teach you all about astronomy.

Enables you to convert *Calamus* .CFN fonts to GEM format so you can use them within any GEM application. Very useful. The manual is clearly written and the program is easy to use.

This "alternative" Desktop enhances and improves on the bog-standard Atari one by enabling you to add the features you want with various modules, but it's not as good as *NeoDesk*.

This collection of nine programs is a suite of useful utilities, file compactors, RAMdisks, screen grabber and so on. Comes with a good printed manual, superior quality PD.

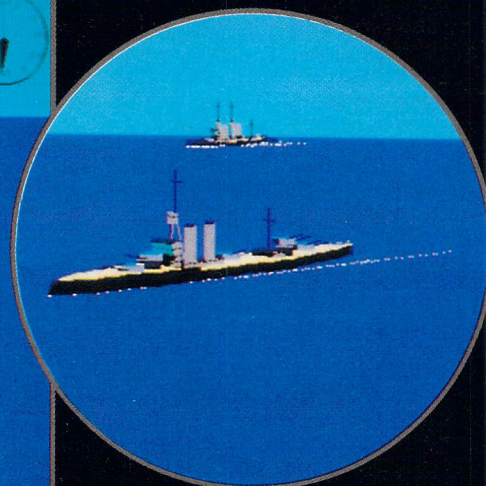
An all-purpose editor, *Edhak* enables you to edit text, data, binary files, disk selectors and RAM. Good enough for basic word processing. Indispensable for the serious ST owner.

This disk formatter and backup utility comes with an 80 page manual to guide you through its extensive features. Keyboard shortcuts, virus checker and HD formatting are available.

Flexidump enables you to make user-defined size printer-dumps of *Degas*, *Neo* or *Tiny* pics. Comprehensive manual via on-screen help. Works on mono and colour printers.

This program by Jeremy Hughes is the best all-round Font Editor for the ST. Always being improved with numerous excellent features. Load in fonts of various formats and then you are able to convert, edit and adjust them all.

COULD YOU WIN ONE OF HISTORY'S GREAT SEA BATTLES?



The screen shots show British battleships steaming towards the German High Seas fleet, at the Battle of Jutland.

DREADNOUGHTS is a computer simulation. It recaptures the drama and spectacle of history's great naval battles – from the Ironclads of the 1890s to the sinking of the Bismarck.

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Harlekin 2 Hisoft Reviewed: 27, 31	£59.95 ☎ 0525 718181 STF Rating: 92%	The ultimate Desk Accessory giving you access to many valuable utilities like a text editor, comms package, RAMdisk, macros, and a comprehensive manager/calendar module.
Imagecopy The ST Club Reviewed: 33	£9.95 ☎ 0602 410241 STF Rating: 90%	This utility enables you to grab images off your monitor and save them to disk, display images from disk to screen – and more. Highly recommended.
IMprint zzSoft Reviewed: 35	£15.95/£10.95 ☎ 0254 672965 STF Rating: 66%	This is a printer utility enabling you to produce quality colour or mono printouts. Happily deals with 9 or 24 pin printers and can import pics in all the popular formats. Good but basic.
Knife ST Hisoft Reviewed: 31	£34.95 ☎ 0525 718181 STF Rating: 86%	A powerful programmer's tool. Using <i>Knife</i> you can cut deep into the innermost depths of your ST's disks, sectors, FATs and hack your way around, altering and recovering data.
Mission Control GFA Reviewed: 12	£20.00 ☎ 0734 794941 STF Rating: 79%	Of interest to serious programmers, this shell program can control and co-ordinate the various GFA language programs, launch applications and the like.
Multidesk Atari W'kshop Reviewed: 5, 31	£29.95 ☎ 0753 832212 STF Rating: 80%	Gets round the problem of only being able to have six Desk Accessories available at once by enabling you to load or remove up to 96 Accessories at once if you have the memory, with no re-booting necessary.
NeoDesk 3 Electric Dist Reviewed: 18, 31	£34.74 ☎ 0480 496666 STF Rating: 94%	This truly excellent replacement Desktop utility makes the Atari GEM Desktop everything it should have been. Particularly useful for hard disk owners – multifarious features including the ability to drag files onto the Desktop for instant access,
Quick ST 3 The ST Club Reviewed: 33	£12.95 ☎ 0602 410241 STF Rating: 88%	Quick ST makes your ST run faster without having to install a blitter chip – you won't want to remove it once it's installed. The package also includes some other goodies.
Shoot-'Em-Up Construction Kit £9.99 Gremlin Reviewed: 4	☎ 0742 753423 STF Rating: 86%	This easy-to-use games creation program enables you to make your own shoot-'em-ups, complete with sprites, music and sound effects.
Trimfont 2 The ST Club Reviewed: 35	£9.95 ☎ 0602 410241 STF Rating: 89%	<i>Trimfont</i> takes your GEM fonts and squashes them so you can get many more in the same disk space. Quick, cheap and easy with a good manual.
Ultimate Virus Killer Douglas Reviewed: 31	£9.99 ☎ 061 456 9587 STF Rating: 91%	Virus killer general Richard Karsmakers has written one of the best programs of its kind. A working demo version was on Cover Disk 26, the full version has even more features.
Ultimate Virus Killer v5.3 Douglas Comms Reviewed: 34	£9.99 ☎ 061 456 9587 STF Rating: 80%	The latest version of this popular virus killer. <i>UVK</i> recognises 57 Boot viruses and five Link viruses. If it detects an infected disk, you can destroy and then immunise a disk. Write to: PO Box 119, Stockport, SK2 6HW.
Universal Item Selector ST Club Reviewed: 5	£19.95 ☎ 0602 410241 STF Rating: 90%	You can get PD alternative fileselectors for free, but <i>Universal Item Selector</i> is the king. With the special Desk Accessory provided, you can call it up at any time for disk copying, file erasing, and other operations. Indispensable.
Universal Item Selector v3.32 The ST Club Reviewed: 34	£14.95 ☎ 0602 410241 STF Rating: 90%	Replace the ST fileselector with this pro version. You can change the directory line, filename extensions and file mask by clicking and dragging a name from the selector box.
Video Titrer ST v2 Laser Distribution Reviewed: 35	£34.95 ☎ 0579 82426 STF Rating: 79%	Create effective title sequences for your home videos. Caters for a variety of effects including fades, wipes, dissolves, scrolls and complicated interlocking effects.

WORD PROCESSORS/EDITORS

There are probably more word processors around for the ST than any other sort of program. The one you need depends on the sort of text processing you do: If you need fast bulk text entry, *Protext* is your best bet, but for fancy fonts and WYSIWYG layout, go for *Write On* or *WordFlair*.

Calligrapher Working Title Reviewed: 22, 26, 30, 31	£99.00 ☎ 0865 883592 STF Rating: 85%	An excellent document processor, including features like a <i>Degas</i> picture processor enabling you to alter images as you import them. Good for producing the occasional special letter or notice.
First Word Plus GST Software Reviewed: 22, 31	£81.68 ☎ 0480 496789 STF Rating: 83%	The upgrade to the PD <i>First Word</i> word processor, these have become almost the "standard" WPs for the ST. A capable program, stable and well supported.
K-Word 2 Kuma Reviewed: 28, 31	£41.00 ☎ 0734 844335 STF Rating: 76%	One of the cheapest WPs, showing its age a bit, but compatible with the Kuma range of business programs. Uncomplicated.

Protext 5.5 Arnor Reviewed: 28, 31	£152.75 ☎ 0733 68909 STF Rating: 95%
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This latest upgrade adds a Collins Thesaurus with 43,000 entry words and a massive 827,000 responses to its armoury. Plus a stack of new features to give you more power than you will probably ever want. Superb printer support.

Redacteur 3 The ST Club Reviewed: 34	£119.00 ☎ 0602 410241 STF Rating: 90%
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A very fast word processor from France. Incredibly powerful. It boasts lots of graphical features – though it doesn't have the near-DTP features of *Calligrapher*. Uses GEM and can import a wide range of pictures in all formats. Formidable.

Tempus 2 Hisoft Reviewed: 3	£39.95 ☎ 0525 718181 STF Rating: 78%
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An incredibly fast GEM based text editor, this program can work on up to four files at once, and compare them. Of use to programmers, but has some word processor-like features.

That's Write Compo Reviewed: 3, 22, 31	£99.99 ☎ 0480 891819 STF Rating: 82%
---	--

Fast gaining friends, this multi-fonted word processor is not only easy-to-use, but is very powerful. It can import pictures, and is capable of virtually DTP-quality output. V2 just released.

Word Writer GST Software Reviewed: 22, 31	£51.39 ☎ 0480 496789 STF Rating: 86%
--	--

Related to *First Word Plus* in style and content, but includes many normally expensive options like a Thesaurus and an Outliner. Imports text from other sources.

Wordflair Hisoft Reviewed: 22	£59.95 ☎ 0525 718181 STF Rating: 87%
--	--

A word processor with an unusual range of features like a database and the ability to do statistical calculations and produce charts. There isn't a spelling checker, however.

Write On Compo Reviewed: 22	Cover Disk 33 ☎ 0480 891819 STF Rating: 90%
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This new WP offers upmarket DTP-type features at a budget price. Several fonts are provided and you can import others from various sources. Highly recommended.

HARDWARE

EMULATORS

As you know, the ST is a great machine, but occasionally through necessity you might want it to be another sort of machine entirely. Perhaps you use a PC at work and need to have one at home, too. Easy – a PC emulator tucked away inside your ST can transform it into a fairly powerful PC at much less than the cost of buying a separate machine. And with a *Spectre GCR* you can have a Macintosh Plus which is actually faster than the real thing for a fraction of the price.

AT Speed C16 Compo Reviewed: 25	£249.00 ☎ 0480 891819 STF Rating: 82%
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First came PC Speed, then the faster AT Speed, and now AT Speed C16 gives you super-fast emulation of the IBM PC, enabling you to run the latest Windows software with aplomb. Supports all screen resolutions up to VGA and offers 640K of free RAM on a 1MByte ST.

ATonce plus Silica Reviewed: 25	£219.00 ☎ 081 309 1111 STF Rating: 85%
--	--

These 16-bit 80286 emulators may require soldering into place – Silica can fit them if required. They come with good system software, and the Plus model runs at a faster 16MHz.

PC Speed Compo Reviewed: 4, 25	£99.00 ☎ 0480 891819 STF Rating: 74%
---	--

This is a budget-priced PC emulator based on an NEC V30 central processing chip which is installed inside your ST without interfering with other upgrades, it enables the ST to run PC software. It also supports floppy and hard drives as well as the PC mouse but isn't actually very quick, though it is a good budget buy.

Spectre GCR Ladbroke Reviewed: 25	£409.99 ☎ 0772 203166 STF Rating: 94%
--	---

It seems like magic, and it is! Using this box of tricks – which plugs into the ST's cartridge port – your ST turns into a Mac. Apple's Macintosh computers are the ones used in the publishing and media world, and are favoured by writers and journalists because of their excellent, but expensive, software. Now all this power is available on your ST, but a minimum 2MByte of memory is recommended because of the size of Mac software. There are also some problems likely with reading and writing to Mac disks.

Moriarty Monulator v1.85 Moriarty Software Reviewed: 34	£20.00 ☎ 0293 539215 STF Rating: 82%
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Don't buy a high resolution monitor, use this high-res. emulator with your monitor or TV instead. The monulator doubles the height of a medium res screen giving you a clearer and faster display than Public Domain emulators

FLOPPY DRIVES

There are many times when you need another disk drive – whether you want to backup your software or avoid tedious disk swapping in two-disk games, a second floppy drive is absolutely essential. They now come extremely cheaply, and simply plug into the back of your ST – there's no messing around with installation utilities required to set up a hard drive.

CSA 354 Drive £69.90
We Serve ☎ 0705 325354
Reviewed: 28, 31 *STF* Rating: 90%

Cumana make one of the best drives in terms of quality of build. Uses a Chinon FZ354 mechanism formatted to a maximum of 84 tracks. Heavy construction and well made, complete with moulded-on 13 amp plug. Excellent quality.

PC720P Drive £50.00
Power ☎ 0234 843388
Reviewed: 35 *STF* Rating: 85%

This external drive works smoothly and efficiently, and writes to a maximum of a perfectly adequate 82 tracks. A pretty good unit if you want to alleviate all that disk swapping.

PL720B Drive £52.99
Power ☎ 0234 843388
Reviewed: 28 *STF* Rating: 89%

The "B" stands for Blitz. A clever drive because you can use it in three modes: on, off and Boot from Drive B. Also comes with a virus blocker mode which prevents data being written to track 0 of a disk. High-speed disk copying is also possible. Uses an Epson SMD 300 drive mechanism and formats to 82 tracks. Ideal if you want a neat cheap drive.

Zydec Drive £54.95
Evesham ☎ 0386 765500
Reviewed: 28 *STF* Rating: 80%

Uses a Citizen OSDC-41C drive mechanism. Can format to 84 tracks but has a higher than average noise output. Poor quality on/off switch.

HARD DRIVES

If you find you're always flicking through an enormous collection of floppies just to find one program, it's probably about time you invested in a hard drive. A 20MByte hard drive can store the equivalent of 22 double-sided floppy disks. The advantage is that your ST can read information from a hard drive over three times faster. Hard drives plug into the DMA port on the back of your ST. This is also the same port the Atari laser plugs into. If you intend using an Atari laser with your ST at some point, check you invest in a hard drive which comes with a throughport. Many hard drives come with an a memory cache which speeds up the rate at which you can read and write information.

Atari Megafile 30 £349.00
Silica ☎ 081 309 1111
Reviewed: 27 *STF* Rating: 60%

Has a short lead making it difficult to use on a 520 or 1040 ST. Only enough utilities to get you going. Very slow unless you're worried about compatibility, there's little to entice you to buy this outdated drive.

Gasteiner 44R removable £499.00
Gasteiner ☎ 081 365 1151
Reviewed: 27 *STF* Rating: 73%

Uses removable SyQuest cartridges each capable of storing 40MBytes of information. Drive is noisy and slow. A poor manual, but the hard drive does come with some helpful utilities.

Hunter 70MByte
£359.00 for 70MByte version
Hunter Business Systems
☎ 0382 28245
Reviewed: 27 *STF* Rating: 52%

70MByte DMA throughport. A 64K cache. Drive is fast and quiet. At the time of reviewing this drive there were problems making it compatible with all ST software, though Hunter now insist this difficulty has been overcome.

Ladbroke 52MByte
£389.99 for 52MByte version
Ladbroke ☎ 0772 203166
Reviewed: 27 *STF* Rating: 81%

One of the fastest drives available. ICD utilities provided and a helpful manual. 64K cache on the drive. A front-mounted power switch which could be prone to knocks.

Mega Drive
£269.00 for 32MByte
Gasteiner ☎ 081 365 1151
Reviewed: 17 *STF* Rating: 88%

These come in a range of capacities up to 100MBytes, and you can have Seagate, Quantum or NEC mechanisms. Rather big and chunky, but they work well enough and are fully featured.

Power 40MByte
£329.00 for 40MByte version
Power ☎ 0234 843388
Reviewed: 27 *STF* Rating: 77%

Comes with a write-protect switch on the back, effectively preventing you from writing any information to the hard drive. Noisy. Comes with all the ICD utilities. Simple to connect up, but there isn't any way to change the DMA address.

Power 900E Data Injection
£299.00 for 52MByte version
Power ☎ 0234 843388
Reviewed: 17 *STF* Rating: 85%

Exceptionally small and quiet, as fast as much bigger units. Go for a larger capacity if you can – you need it! ICD utility software is supplied.

Power Drive 900
£399.00 for 40MByte version
Power ☎ 0234 843388
Reviewed: 17 *STF* Rating: 92%

This older model is great value although it's not as small as the newer 900E, but still more compact than most.

Protar 50DC
£423.50 for 20MByte version
Protar ☎ 0923 254133
Reviewed: 27 *STF* Rating: 90%

Good manual. Easy installation process helped by the excellent explanations. Quiet drive. 64K cache. Not as fast as Ladbroke's. Auto-booting and auto-parking. Good quality manufacture. Short DMA lead provided.

Protar 1244R Removable £611.00
Protar ☎ 0923 25413
Reviewed: 27 *STF* Rating: 79%

A removable drive using the SyQuest mechanism used in the Gasteiner 44R. Considering the traditionally slow speed of removable hard drives, this one is actually reasonably fast.

Reference 40
£299.00 for 40MByte version
Evesham ☎ 0386 765500
Reviewed: 27 *STF* Rating: 73%

Very poor manual, but simple to install. Has a bulky external power supply. No power switch on the drive. DMA throughport. Average speed.

Vortex 40MByte
£499.00 for 40MByte version
Silica ☎ 081 309 1111
Reviewed: 27 *STF* Rating: 68%

A write-protect switch to protect your information. Instead of auto-parking at power off, it auto-parks the head after a pre-set period without activity – 15 minutes default. It also powers down the motor after about five minutes of no activity. Excellent manual. Smart case. Robust. Near silent drive. Auto-parking heads are difficult to get to grips with. Generally adequate performance, but expensive.

MEMORY UPGRADES

But do you really need extra memory? It depends on the uses you put your ST to. For playing games, you can probably get by with a basic model 520 ST, although even some games now need 1MByte of memory. For example, you can't play massive new games like *Populous 2*, *Heimdall*, *Lure of the Temptress* and *The Secret of Monkey Island*. But for business or serious uses like desktop publishing or music sequencing, you really need to have a bigger RAM in your ST – you need at least 1MByte to be able to run *Pagestream 2* and *Calamus*. Once you've upgraded you can also make more efficient use of DTPs by holding fonts in memory. More RAM means you can create longer music sequences, as well as longer digitised sound samples at higher frequencies – which means much better quality sound. When you're using a word processor, you can open more than one large document at a time.

Assuming you already have a double-sided internal disk drive installed, a RAM upgrade should be your next priority. But is it worth going beyond 1MByte, to 2MByte or even 4MByte? Well, you might need to if you want to use large programs, Desk Accessories, replacement Desktops like *NeoDesk*, and also hook up an Atari Laser printer, which needs a minimum of 2MBytes just to control it!

You can get all this simply and easily with the help of our complete guide to upgrading that was in last month's *ST FORMAT* – turn to page 64 to order a copy if you don't have yours.

Alfa Data £149.00
Gasteiner ☎ 081 365 1151
Reviewed: 25 *STF* Rating: 83%

Comes as either a 0.5 or 2MByte populated board, we looked at the 2MByte which takes any 520 ST to 2.5MBytes. Made in Taiwan, the quality of this neatly-made board looks good, and suppliers Gasteiner give a two year warranty with it – and also offer a cheap installation service for the timid!

Aries 2MByte £99.00/£169.00
Ladbroke ☎ 0772 203166
Reviewed: 25 *STF* Rating: 84%

Can be expanded up to 4MByte. The smallest, most compact board on test, the RAM chips reside on a PCB only 61mm long by 51mm wide, and with a total thickness of only 11mm – it easily fits over the Video Shifter chip. The kit requires the soldering of a number of colour coded leads attached to the board to various locations on the ST's circuit board. Ladbroke can fit it for a small charge.

Aries 0.5MByte £39.99
Ladbroke ☎ 0772 203166
Reviewed: 35 *STF* Rating: 76%

Ideal for machines which contain the non-standard MMU chips. Should be installed professionally – Ladbroke's charge £20.00 to fit it. All in all a good upgrade which does the job.

Evesham 2MByte
STE: £80.00/STFM: £99.99
Evesham ☎ 0386 40303
Reviewed: 25 *STF* Rating: 72%

This kit uses SIMM chips which means that expanding it to 4MByte later is merely a matter of plugging in two small boards to the empty sockets on it. The RAM board connects to the Shifter and MMU chips via the normal method, and also takes a four way lead from the point which normally powers the internal drive, with an additional lead supplied to link the board to the drive, thus restoring its supply. Jumper cables are also supplied to disable any excess RAM already on board the ST.

Power 2/4MByte upgrade
£99.00/£169.00
Power ☎ 0234 843388
Reviewed: 31 *STF* Rating: 92%

The memory is housed on a small PCB which plugs into the Video Shifter chip socket, and is linked to the MMU by the usual ribbon cable terminating in another small PCB which plugs onto the MMU chip. Jumper leads are supplied if existing memory needs to be disabled, and the instructions are clear and concise. Extra RAM can be added up to 4MByte.

X-Tra RAM
£69.99/£159.99
Marpet Developments
☎ 0423 711671
Reviewed: 25 *STF* Rating: 86%

These are tried and trusted products. The board can be used to provide a 0.5MByte upgrade for 520s, and is expandable to give a maximum memory of 2.5MByte by changing the RAM chips later. The RAM is on its own board, which connects to the MMU and Video chip via the usual two small PCBs at the end of ribbon cables. Clear instructions and a RAM testing disk are provided.

X-Tra RAM STE 0.5MByte
£52.00 (incl postage)
Marpet Developments
☎ 0423 711671
Reviewed: 35 *STF* Rating: 86%

This is a simple to install package with a 20 page manual. It comes with memory testing software and is highly recommended. It also includes SIP adapters for those STes without standard SIMM sockets.

X-Tra RAM ST Deluxe
£67.99 (incl postage)
Marpet Developments
☎ 0423 712600
Reviewed: 35 STF Rating: 87%

This enables you to upgrade pre-STE machines by installing standard SIMM memory boards. Comes with a detailed instruction book, and is fully upgradeable to 4MByte. It can be installed in all machines except those with oblong MMU chips. Very easy to fit.

Zydec 0.5MByte solderless
£49.95
Evesham ☎ 0386 765500
Reviewed: 35 STF Rating: 87%

This enables you to upgrade pre-STE machines by installing standard SIMM memory boards. Comes with a detailed instruction book, and is fully upgradeable to 4MByte. It can be installed in all machines except those with oblong MMU chips. Very easy to fit.

MICE AND JOYSTICKS

The Atari mouse becomes something of a dinosaur when you see what other makes are available. Many of the other brands are much faster, easier to hold and they even look more attractive. And, of course, you're not going to get very far playing games without a joystick of some description. These come in all sorts of styles, from the plain and useful to the weird, extravagant and completely useless. Prices vary significantly, too – remember that high prices aren't necessarily an indication of quality

Alfa Data Crystal Trackball
£34.95/£39.95
Gasteiner Technologies
☎ 081 365 1102
Reviewed: 34 STF Rating: 92%

A trackball is like an upside-down mouse. They're particularly useful if you don't have acres of desk space to play with, because you keep the unit in one place and roll the ball instead. Even a moderate finger-roll takes you from one side of the screen to the other.

Gravis Mousestick £70.50
RC Simul'ns ☎ 0272 550900
Reviewed: 24 STF Rating: 90%

Whatever next? A programmable joystick. This impressive device is more responsive than a joystick and more accurate than a mouse. The Gravis Mousestick also includes analog to digital convertors. This is particularly useful if you play flight sims. Knights of Sky from Microprose has been specially configured to take full advantage of the features of the stick.

Gravis Switch Joystick £39.99
RC Simul'ns ☎ 0272 550900
Reviewed: 27 STF Rating: 85%

This robust joystick is slightly on the expensive side – although it's probably twice as good as a standard £10.00 stick, it does cost four times as much! Has more features than most standard joysticks like adjustable tension.

Mouse Tricks 2 £10.00
Jonathan Lawrence
76 Sistova Road, London SW12 9QS.
Reviewed: 34 STF Rating: 90%

This all-singing, all-dancing mouse utility program was demonstrated on Cover Disk 28. *Mouse Tricks 2* is a Desktop Accessory, enabling you to set the exact speed of your mouse, set up menus so that they only drop down when you click on them and define the right mouse to act as the <Shift> key. Invaluable.

Naksha Mouse £28.99
see page 94 ☎ 0458 74011
Reviewed: 7,31 STF Rating: 88%

This 280 dpi mouse is a far better rodent than the dreadful Atari device.

Power Mouse £14.95
Power ☎ 0234 843388
Reviewed: 31 STF Rating: 79%

Good, cheap and rather attractive, ergonomic, too. What more do you need?

Quickshot 3 Plus Turbo joystick
£12.91
Bondelle Europe Ltd ☎ 081 365 1993
Reviewed: 31 STF Rating: 77%

Micro-switches and auto-fire.

Sting-Ray joystick £13.95
Spectravideo ☎ 081 900 0024
Reviewed: 31 STF Rating: 81%

Unusual handheld design with micro-switches.

MODEMS

With a modem you are able to get your ST to "talk" to other computers and bulletin boards over the phone lines using comms software, and upload or download files and programs. Modems offer you various levels of features and speed of use, from the simple ones that are very cheap, up to fast, expensive ones.

2400 modem £149.99
Supra ☎ 081 566 6677
Reviewed: 31 STF Rating: 90%

A recent price cut has made the Supra 2400 modem more of a bargain than it already was. It also has the advantage of auto-dialling and auto-answer features and it is fully Hayes compatible. This American-made modem operates at 2400 Baud, and comes with a full five year guarantee.

9600 Plus £351.33
Supra ☎ 081 566 6677
Reviewed: 31 STF Rating: 84%

This latest model is the top-of-the-range. It is a V32 9600 Baud model, and is fully Hayes-compatible as well as auto-dialling and auto-answering. The Supra 9600 Plus comes with a connecting lead for your ST. Just watch out that in the excitement of playing with all the features you don't run up your phone bill too much!

Fax modem £299.00
Atari W'kshop ☎ 0753 832212
Reviewed: 31 STF Rating: 78%

What a good idea, a modem for your ST that not only enables you to do all the usual comms things, but also sends and receives faxes! Handles graphics as well as text – even screenshots. Display to screen, save to disk or print out with software provided.

MONITORS

Monitors offer a staggering increase in picture quality over a television display, and, of course, some software only runs on a mono monitor. For a monochrome display, you're pretty much stuck with the (admittedly good) Atari model, but for colour you can do better than that.

Philips CM8833 Mk 2 (colour)
£215.00
Swift Micros ☎ 0582 476257
Reviewed: 31 STF Rating: 90%

Philips turn these out by the million – they are attractive and well specified, and, with stereo speakers, it's just the job for your STE. Make sure you get the special monitor lead supplied.

SC1224 (colour) £260.00
Atari ☎ 0753 333441
Reviewed: 31 STF Rating: 84%

Although this monitor is based on the Philips' chassis, it's it's generally not as well regarded as the CM8833 – the colours might seem a bit dark for the taste of some people, although the picture quality is good. Atari have just released a new version of this monitor.

Atari SM144 (mono)
£129.00
Best Prices ☎ 0903 700714

Replaces the SM124 which was an excellent mono monitor for detailed work like desktop publishing work or word processing. Had a very crisp and steady monochrome display. Check out *ST FORMAT* next month to see if the new version is an improvement.

MUSIC

Making music on your ST is not a cheap hobby – once you've got the software you then need to shell out for the hardware. A keyboard, perhaps – then a sound sampler or two for those tacky "Ah yeah"s, some mixing equipment, a sound manipulation package so you can muck about with the samples. It won't be until you've got all this equipment that you'll be a star (who said anything about natural talent?). Bankrupt, but a star.

EVS-1 £299.00
Turnkey ☎ 071 379 5148
Reviewed: 15 STF Rating: 88%

This budget priced rack-mountable synth module has 100 voices built-in and you can program and load in your own, too, using the supplied software. Has an excellent range of features for the price. Sounds good, but you need a MIDI keyboard to play it.

Pro-Series 12 Sound Sampler
£199.00
AVR ☎ 0582 457348
Reviewed: 16,30 STF Rating: 84%

Aimed at the professional, this 12-bit input/output sampler sounds really good, and, despite being packed with features, it's very easy to use.

Pro-Series 16-bit Sampler
£350.00
AVR ☎ 0582 457348
Reviewed: 25 STF Rating: 94%

The very latest 16-bit version of AVR's sound sampler, this one is the biz. You can sample at CD quality, manipulate and adjust the recordings with superb software – a deserved *FORMAT* Gold.

Replay 8 Sound Sampler
£79.95
Microdeal ☎ 0726 68020
Reviewed: 18 STF Rating: 95%

This sound sampling add-on plugs into the ST's cartridge port and, using the phone sockets on it, you can input sound and digitise it, or play it back. Sophisticated software control to manipulate samples included. Excellent results obtainable.

Roland CF-10 Digital Fader
£129.00
Roland ☎ 0792 700121
Reviewed: 17 STF Rating: 86%

This touch sensitive ten channel MIDI mixer is designed to match other Roland modules like the CM 32 – you can set the level, and pan from left to right for most MIDI gear.

Roland CN-20 Musical Entry Pad
£129.00
Roland ☎ 0792 700121
Reviewed: 17 STF Rating: 87%

Designed to complement the above, this is like an extra keyboard. Press small switches and nearly two octaves of these "keys" work along with a slider and octave switch to give an almost eight octave range.

Stereo Master £39.95
Microdeal ☎ 0726 68020
Reviewed: 34 STF Rating: 77%

Take samples in stereo using the two-channel, 8-bit analog to digital cartridge supplied. Samples are recorded in stereo no matter what brand of ST you own, but it is only possible to hear stereo samples if you're lucky enough to be using an STE.

Stereo Playback £29.95
Microdeal ☎ 0726 68020
Reviewed: 22 STF Rating: 82%

This connects to the ST's cartridge port and delivers stereo sound via your hi-fi. Comes with demo software, including a drumbeat program. Less versatile than Monster Stereo Cartridge.

Stereo Replay £89.95
Microdeal ☎ 0726 68020
Reviewed: 29 STF Rating: 89%

A moderately priced sampler cartridge, records and playbacks in stereo. Includes excellent software and a MIDI compatible drum program.

PRINTERS

So you've got your ST complete with word processing, graphics and desktop publishing programs, but sooner or later you're going to want to get those masterpieces you have created off the screen and onto paper. To achieve such hard copy you need a printer. But buying the right one can be a daunting task, with dozens of makes on the market and each manufacturer producing many models, there are hundreds to choose between! Humble dot matrix printers are still around, but as the lasers and inkjets get cheaper, their days could be numbered.

BJ-10e Canon Reviewed: 17, 25, 31	£405.00 ☎ 081 773 3173 STF Rating: 90%	Not only the cheapest at under £270 in the shops, but also the most innovative and exciting inkjet printer. Its compactness and portability make it unique. Fast printing comparable to dot matrix speed on text. Splendid printing, solid blacks, no noise, a pleasure to use. Laser printing quality at a price you can afford!
DeskJet 500 Hewlett Packard Reviewed: 20, 25	£583.83 ☎ 0344 369369 STF Rating: 90%	Bigger and sturdier than the Canon BJ 10e, but about equal in print quality. The DeskJet machines are generally better supported by ST software, and the in-built auto-sheet feeding tray is a bonus.
HL4 Brother Reviewed: 25	£1,173.00 ☎ 061 330 6531 STF Rating: 89%	A compact, attractive machine with a very good range of of emulations, it pretends to be a HP Laserjet 2, making it compatible with most software which drives laser printers. Print quality is equal to the Atari SLM 605, but it's not as fast.
JP-150 Inkjet Olivetti Office Reviewed: 33	£398.33 ☎ 0908 690790 STF Rating: 67%	Good quality printouts are possible from this inkjet printer. Simple to use, but slightly on the expensive side. You can get an add-on sheet-feeder for it as well.
KX-P1123 Panasonic Reviewed: 25, 31	£240.00 ☎ 0344 853915 STF Rating: 90%	Available in the shops for about £185.00, this is the best buy best buy in the 24-pin group, and gives a pretty good all-round performance. This new model is fairly quiet, and is self-contained – no bits and pieces to assemble like most printers. Modern styling and design make this an attractive option.
KX-P4420 Panasonic Reviewed: 25	£1,404.00 ☎ 0344 853915 STF Rating: 80%	The dearest and biggest laser on test, this is more at home in the office than the home. Although the printed results are very good, and it offers a good speed and range of fonts, the general user unfriendliness lets it down.
Laserjet 3P Hewlett Packard Reviewed: 25, 30, 31	£1,291.00 ☎ 0344 369369 STF Rating: 91%	An exciting machine with HP's Resolution Enhancement Technology. This uses smaller-than-usual dots around the outside of parts of the image being printed – thus smoothing out the curves. It achieves this in its internal memory, independent of the program you are using. Output is finely detailed, giving clearly the best printed results. Although it comes with 1MByte of RAM onboard, you may need more. Very easy to use, and extremely compact in size. A little beauty!
LC-24/LC-24 Colour printers Star Reviewed: 17, 25	£299.00/£349.00 ☎ 0494 471111 STF Rating: 80%	The 24-pin version of the LC 200, there is not a huge increase in print quality, which shows what a good machine the LC 200 is. It shares all the virtues of its little brother like a good range of emulations, electronic DIP switches and good standard of design. It's quieter too, but a bit on the pricey side.
LC-200 Star Reviewed: 17	£304.00 ☎ 0494 471111 STF Rating: 80%	From the popular Star range comes this budget priced printer with the colour option built in. You can use a plain black ribbon cartridge if you are only printing text, or slot in the four colour one – both are supplied. Relatively simple manual to get to grips with. Futuristic styling – with rounded edges – and good design have gone into this machine, paper handling is very good, and the control panel is simple and logical. Generally, a very pleasing all-rounder at an affordable price.
LQ-400 Epson Reviewed: 25	£203.00 ☎ 0442 61144 STF Rating: 85%	Very similar to the Epson LX 400 in appearance, but with a very much better quality of print. Unfortunately, it's even noisier than the LX 400, and to use single sheets of paper you remove the tractor feed, which is rather inconvenient. However, the quality of printed text is clearly the best of this group, making it a good choice for word processing work.
LX-400 Epson Reviewed: 17, 25	£169.00 ☎ 0442 61144 STF Rating: 75%	This is at the bottom of the Epson range, and can be picked up for around £140. You can't go very far wrong with the Epson name – the manual is good and the printer matches the Atari colour scheme. Despite all this, it's nothing to get excited about – it lacks proportional spacing (the ability to space individual letters according to their true width) and has a noisy screech when it's printing.
M-1309 Brother Reviewed: 25	£239.00 ☎ 061 330 6531 STF Rating: 78%	The most expensive printer in the 9-pin section, but also the also the most highly specified. Stylish design, easy font selection and a wide range of emulations are on the plus side. Printed output is no better than the less expensive Panasonic.

M-1324
Brother
Reviewed: 25

£319.00
☎ 061 330 6531
STF Rating: 85%

The second dearest 24-pin on test at about £247 in the shops, and like the Panasonic 24 pin, has electronic DIP switches. But it offers the largest number of fonts in this group – eight with Shadow and Outline enhancements also available for the text. This machine produces excellent graphics output, only bettered by the dearer Citizen ProDot 24.

Paintjet printer
Hewlett Packard
Reviewed: 25

£975.00
☎ 0344 369369
STF Rating: 80%

An unusual and specialised little printer which is widely used in the PC market for the production of high quality colour graphics. Not much ST software really takes advantage of its capabilities, perhaps this will change with the TT. It was the quietest machine tested, and at 180 x 180 dpi the text quality was good, but not very black. With the advent of colour DTP on the ST, it could come into favour.

ProDot 24
Citizen
Reviewed: 25

£599.00
☎ 0895 272621
STF Rating: 87%

This may be beyond the reach of many home users – being targetted at the professional/business market – but it's a good machine. It incorporates many advanced features, like a non-volatile memory enabling the storage of downloaded fonts and logos. The extra options like an auto sheet feeder and a colour conversion kit are not too expensive.

SLM 605
Atari
Reviewed: 25, 31

£821.00
☎ 0753 533344
STF Rating: 89%

This replaces the older Atari SLM 804 laser printer and is smaller and a bit cheaper. We tested this running on a TT with hard disk and the impressive thing is the speed of printing, it knocks the others for six, taking only 25 seconds to print a page of *Protext!* Print quality is excellent, but it only works with STs/TTs, unlike others lasers which connect to any computer.

SQ 850
Epson
Reviewed: 25

£903.00
☎ 0442 61144
STF Rating: 73%

A solid, well-built machine with a heavy price, advertised at about £550. More like a conventional printer in appearance than the other inkjets on test, but not up to their very high standards of output. Very fast text printing, and ten different fonts, but the output looks a bit spidery. A bit bulky for home use, but it's quiet and could be ideal for a small office.

Star LC-20
Star Micronics
Reviewed: 34

£234.00
☎ 0494 471111
STF Rating: 89%

This 9-pin dot matrix printer is capable of excellent Near Letter Quality results, though it's a little slow. Comes with four internal fonts. You can pick it up in the shops for as little as £150.00.

Swift 9
Citizen
Reviewed: 25

£239.00
☎ 0895 272621
STF Rating: 87%

Providing competition for Star is this new model which offers colour via a plug on upgrade. Although this colour kit usually costs about £35, some dealers include it free. The general text quality is on a par with the Star LC 200, but its colour output is not quite so good. A little noisy, but switching and paper handling are good, and it's pretty fast on text.

Swift 24
Citizen
Reviewed: 25

£369.00
☎ 0895 272621
STF Rating: 75%

Selling for the same price as the Star 24-pin colour, this machine produces the best output of both text and graphics, but you may have to pay extra for the colour kit. The control panel switches are confusing on this one, and getting it to print in colour was difficult – the manual was not much help, either.

SCANNERS AND DIGITISERS

You can do things the hard way, and slave over your ST doing all your graphics yourself. Or alternatively you can cheat, and treat yourself to a scanner or digitiser. Scanners enable you to – well, scan printed pages and convert them into images that you can then use on your ST, and then manipulate them in a graphics package.

Digitisers are devices that enable you to trace printed images by means of a puck – they're not quite as labour-saving as scanners but they do offer potentially better results.

Datascan Pro
Pandaal
Reviewed: 15

£109.95
☎ 0234 843355
STF Rating: 93%

This hand-held scanner is one of the fastest and easiest to use. The hardware is comfortable to hold, and the software very direct. For the quick production of quality scanned artwork, you can't go wrong.

Datascan A4 Pro
Pandaal
Reviewed: 23

£499.95
☎ 0234 843355
STF Rating: 96%

For professional use, this machine scans a full A4 page of paper. The hand scanners only cope with a picture four inches wide. A motorised sheet feeder guides the page through automatically. Excellent results – the printouts and on-screen images are detailed and consistent.

Geniscan GS4500
Date
Reviewed: 9

£129.99
☎ 0782 744324
STF Rating: 82%

A hand scanner which has only two resolutions – 100 and 200 less than most of its competitors. Supplied with editing software and OCP Advanced Art Studio. Not STE compatible.

Golden Image
Ladbroke
Reviewed: 18

£149.00
☎ 0772 203166
STF Rating: 95%

This scanner offers a good opto-mechanical unit, plus outstanding scanning/editing software in the form of Touch-Up. Not as fast and direct to use as the Datascan Pro, but a splendid buy.

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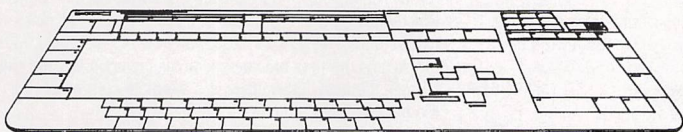
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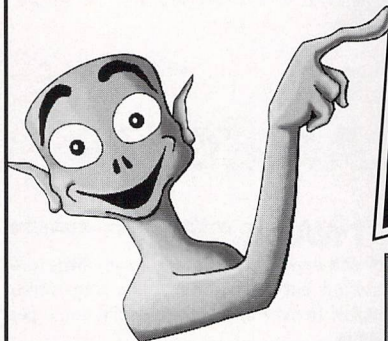
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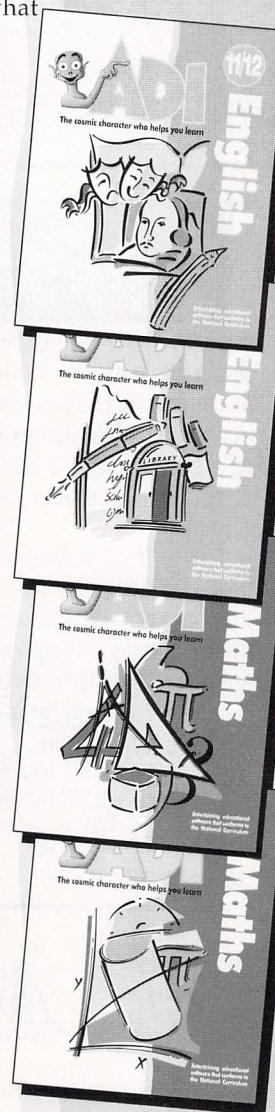
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Mark 4 Cherry Digitiser

£534.63
Cherry ☎ 0582 763100
Reviewed: 29 STF Rating: 88%

This flat tablet takes up to an A3 size sheet of paper. Using a special pen or puck both supplied you can "trace" anything off the page into the ST. Works with any GEM software you have - great for DTP, CAD or drawing programs. An expensive, but quality device.

Horoscope and Zenner £2.50

Riverdene PDL ☎ 0734 451239
Reviewed: 35 STF Rating: 64%

Horoscope tells you your sunsign and some general facts about it, with some simple predictions. *Zener* attempts to test your ESP.

I Ching

ST Club ☎ 0602 410241
Reviewed: 35 STF Rating: 70%

A mixture of programs including *I Ching* - an ancient Chinese divination, a biorhythm program, a program to work out your lucky number and a Chinese horoscope.

K..AT

Q Logic ☎ 0796 2001
Reviewed: 29 STF Rating: 82%

This is a remote control unit which can be plugged into the ST and configured to work up to 14 different keys. Its main use is for working sequencer programs while far away from your ST - at your synth, for example.

Met-2 Satellite Receiver

£939.94
ICS ☎ 0903 731101
Reviewed: 11

A special receiver, pre-amplifier and antenna plus the appropriate software enable you to receive, display and manipulate live weather pictures direct from the Meteosat satellite on your ST's screen.

Power Clocks

£14.95/£19.95
Power ☎ 0234 843388
Reviewed: 35 STF Rating: 80%

A cartridge clock that automatically sets the date and time when you boot up your ST. Contains a lithium battery supposed to last for five years. Essential.

SIMM conversion

£119.95
Evesham ☎ 0386 765500
Reviewed: 31 STF Rating: 86%

Gives any STFM the ability to use Single Inline Memory Modules, a convenient form of plug-in memory chips.

ST-IC

£39.95
Romulus Data Systems
2 Downs Grove, Southview Park,
Basildon, Essex SS16 4QL
Reviewed: 30 STF Rating: 61%

A technically clever - but practically not that useful - device which enables your ST to control all your infra-red remote control units, like your TV, video, and CD player. Works, most of the time, but has problems learning commands. After that, though, it's easy. Essentially, it's a remote control for your remote control.

Teletext Adaptor

£152.16
Microtext ☎ 0705 595694
Reviewed: 5 STF Rating: 81%

Instead of watching your TV to see CEEFAX or ORACLE you can use this device which enables you to not only display teletext pages on your monitor, but also save them to disk.

The Game Maker's Manual

£12.95 ISBN 1-85058-158-4
Sigma Press ☎ 0625 531035
Reviewed: 34 STF Rating: 80%

This 280 page book tells you everything you need to know to design and program your own games using both STOS and ST Basic.

MISCELLANEOUS

HARDWARE AND SOFTWARE

There're always some, aren't there? Bits of software, hardware and handy little widgets which don't really fit into any other category but deserve a mention somewhere. Everything in this selection isn't going to appeal to everyone but are useful and - perhaps even invaluable - for particular applications.

Astrobase £100.00
Magic Space ☎ 0252 703886
Reviewed: 35 STF Rating: 90%

A comprehensive chart calculator which can handle natal, transit, composite, synastry, harmonic and more. A very professional piece of software.

Astrobase Reportwrite £150.00
Magic Space ☎ 0252 703886
Reviewed: 35 STF Rating: 90%

A very well featured program including an atlas and British summer time checker. Produces a complete and detailed natal chart, and it also gives you the option to add in your own interpretation.

Astrology £3.95
PDLs stocking Budget titles:
see page 48
Reviewed: 35 STF Rating: 90%

An introduction to the world of planetary positions and aspects. Includes tutorial programs to explain the whole process. Comes with full printer support.

Astrology Programs £1.45
ST Club ☎ 0602 410241
Reviewed: 35 STF Rating: 72%

A mixture of astrology programs including working demos. Most use files containing birth details to work with and a program for creating these is included.

GramSlam US\$39.95
Phil Comeau ☎ 0101 613 825 6271
Reviewed: 33 STF Rating: 46%

A grammar checker that doesn't work very well, failing to pick up the most obvious errors and alerting you to problems that don't really exist. Good idea, though.

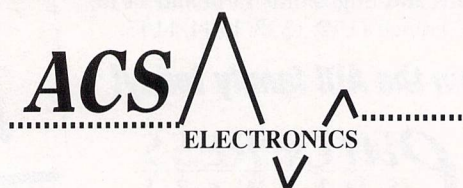
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SPU Pictures from within STOS Programs

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(**SPECTRUM (SPU)** uncompressed picture files are generated by such packages as SPECTRUM 512 (ANTIC PUBLISHING), ROMBO's VIDICHROME-ST digitizer etc.)

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ST FORMAT JULY 1992 **1**

TOTAL! The only magazine dedicated to Nintendo gamers, full of reviews and tips for the NES, Game Boy and Super NES!



FACT: More Nintendo products reviewed than any other mag in Britain! Game Boy, NES and now Super NES!



200 competition winners will walk away with their Game Boys tucked safely inside these smart holsters!

Yeah... shame you didn't have it a bit sooner, though - we've been spotted. Um, hi there potential reader person (gulp!)



Quick Andy, hurry up with that paint! When people see that there are real Turtles in the mag, they'll fall over themselves to buy a copy. What a great idea, eh? And it was mine, not yours but mine. My idea, mine! Hahahahaaa!

12 pages packed with tips for Batman, Terminator 2, Digger T. Rock and Star Wars. Plus all your game questions answered!

Got a Nintendo? Then get TOTAL! Issue Six is on sale right NOW!

RICOH PCL5 LASER PRINTER

Ricoh UK Ltd is part of the worldwide Ricoh Group of companies, originally established in Japan, in 1936. With a turnover of over \$5 billion and 37,000 plus employees, Ricoh has been producing computers and peripherals since 1971. They are renowned in the industry as pioneers in the field of Office Automation Equipment and have won many awards for outstanding industrial design. Ricoh have employed all their expertise to produce a 'first' in laser printers for the worldwide market, the LP1200 with FLASH ROM.

Fully HP LaserJet III™ compatible, the new LP1200 laser printer employs industry proven laser technology. Unlike LED page printers, which use light emitting diodes, the LP1200's laser lightsource, focussed by high quality lenses, is able to produce the most accurate and intense printed images. It has 2Mb of RAM built-in and requires no additional RAM to print a full A4 page of graphics. Its fast, efficient processor and engine, together with straight paper path design, allows printing at a full 6 pages per minute. Unlike its competitors, this advanced laser engine enables the LP1200 to address a range of print resolutions up to 400dpi. A printer driver is scheduled for release in late May, to enable the Ricoh LP1200 to print at 400dpi from Windows 3.

Again, unlike the competition, the LP1200 includes a powerful document description language as standard. This language, 'LAYOUT', offers unique opportunities to develop custom-made printing systems. In particular, forms and document templates can be designed and stored electronically in the LP1200's unique FLASH ROM, alleviating the need for pre-printed forms!

FLASH ROM UPGRADABLE!

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Silica Systems are pleased to introduce the revolutionary, new Ricoh LP1200. It has all of the specifications that you would expect to see in today's most technically advanced laser printer, plus a unique additional feature which places it far ahead of the competition - FLASH ROM. This 'Future Proof' technology protects the investment you make when you buy a Ricoh LP1200, as it enables you to keep up to date with new laser firmware developments. FLASH ROM is an area of memory inside the LP1200 which holds the printer's controller instruction firmware. If new firmware is developed, updated printer command languages etc, can be downloaded into this memory. Other manufacturers would require you to buy a new printer! Fonts, macros, additional emulations and graphics can also be stored in FLASH ROM, or on removable FLASH ROM IC cards. The new Ricoh LP1200 is the only laser printer to offer this FLASH ROM facility.



The Ricoh LP1200 is a genuine laser printer and not an LED printer. Make sure you check out the competition!

See how the Ricoh LP1200 compares to its Laser Printer Competitors

FEATURES	EPSON EPL4100	HP LASERJET IIIP	MANNESMAN TALLY MT904+	RICOH LP1200
Average Street Price	£569	£699	£699*	£699
Official RRP	£945	£1,179	£1,099	£1,195
Maximum resolution in dots per inch	300x300	300x300	300x300	400x400
Windows 3 Driver @ 400 dpi (May)	-	-	-	YES
Print Speed	6ppm	4ppm	4ppm	6ppm
Straight Paper Path	YES	-	-	YES
PCL 5 Printer Command Language	-	YES	YES	YES
HP-GL/2 Vector Graphics included	-	YES	YES	YES
Resolution Improvement/Enhancement	YES	YES	YES	YES
Full A4/300 dpi graphics with standard RAM	-	-	-	YES
Warm Up Time	<45 secs	<60 secs	60 secs	45 secs
First Page of Text Output	<20 secs	<40 secs	34 secs	<15 secs
Document Description Language included	-	-	-	YES
Flash ROM	-	-	-	YES
Upgradable Firmware	-	-	-	YES
IC Card Slot	YES	-	-	YES
Scalable Resident Fonts - in HP LJ III Emulation	-	8	8	8
Resident Bit-Mapped Fonts	11	14	14	14
AGFA Intellifont Scalable Font Technology	-	YES	-	YES
HP LaserJet III Emulation Included	-	YES	YES	YES
EPSON FX Emulation Included	YES	-	YES	YES
IBM ProPrinter Emulation Included	-	-	YES	YES
Standard Tray Capacity	100	70	100	100
Protective cover on standard tray	YES	-	YES	YES
Cost per copy*	1.65p	2.00p	1.71p	1.65p
Min-Max Paper Weight in gsm	60-157	60-105	60-120	60-157
Able to print on OHP Film	YES	YES	YES	YES
Able to print on card (157gsm - Manual Feed)	YES	-	-	YES
Auto Sensing on Parallel and Serial ports	YES	-	-	YES
Standby -Noise Level	<40dB	31.7dB	<35dB	<38dB
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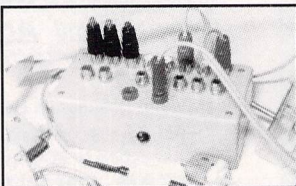


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Twilight zone

What's the ethos behind Twilight Zone? Well, what we do, you see, is save up all our bitter and twisted feelings, all our unreleased anger and bile, and figuratively spit it out on one page. Then, with the contents written, we can write Twilight Zone. (Ha.)

TA VERY MUCH – AND WHILE YOU'RE HERE...

Ed Ricketts would just like to thank all the peeps who sent in copies of *Virus* after his heartrending plea of last month. They are the collectively wonderful Tim Pollard of Notts, Colin Cooper of Essex, Stephen Gregg of Portsmouth, Richard Hewison of Luton and Andrew Marsden of Notts. Ed thinks there were a couple of other equally wonderful people who sent that very same disk, but – er, he seems to have mislaid their names and addresses, but even so, he'd like to thank them too. We'd received three copies even before the issue went on sale. It's good to know that in a world gone mad there are still some people who

care. Remember, a smile is free. (Cue sickly look at camera and freeze frame).

The Editor was so impressed by this response to Ed's plea that he's decided to try and sell his Mega 1 ST on these pages. Up for grabs is a colour monitor as well as the Mega – for the two he paid over £750.00 about two and a half years ago – and they both still work perfectly! The machine has been used to write literally tens of thousands of words which have appeared in pages of *ST FORMAT* in recent years. There's no catch to this incredible offer and, as an added bonus, Mark it's-a-brilliant-idea-they'll-love-it Higham (the

Editor) has offered to add his autograph in marker pen to the ST if the new owner should want him to.

What we need you to do if you're interested in this special one-off offer is to write to Mark Higham, Future Publishing, 30 Monmouth Street, Bath, Avon BA1 2BW. Tell him how much dosh you want to be relieved of in return for the Mega ST 1 and the monitor, and include a telephone number. Don't forget to say whether you would also like him to deface the machine with his scrawl or leave it in the pristine state (save for the odd dog's hair) it is presently in. Oh yes, and he'll organise postage and packing, too.

TEN PROPOSED NEW GAMES

1. Shop Assistant Dizzy (Codemasters)
2. Guybrush Threepwood's Pop Challenge (licensed to Codemasters)
3. British Airways Stewardess Simulator (MicroProse)
4. VD Clinic Dizzy (Codemasters)
5. Beer Spill 2 (pub fight simulation from Impressions)
6. Cutesy Console Characters 3 (US Gold)
7. Greek Olive Boy Makes His Sweet Fortune Ha Ha Holly (Loricel)
8. The Word – The Computer Game (licensed to Ocean)
9. Aliens 3 – The Trivia Game (also licensed to Ocean)
10. Dole Queue Dizzy (Codemasters)

THE ALTERNATIVE TO ST ANSWERS

On the whole the letters we get for ST Answers are from normal, sane, well-balanced people. But there are one or two people who somehow

don't quite seem to get it. You know who you are, we know who you are – but don't worry, we won't tell anybody else...

First of all came this handy tip from Argyll involving something mightily interesting happening in *STOS*. Just listen to this:

"If you type XSOT904765122 on line 140 as part of a loop, you will be serenaded by a musical translation of the Dead Sea Scrolls, and a graphic display of two chimps having sex."

Well, we may be wrong here, but we have just the teeniest suspicion that this *STOS* enthusiast is telling porky pies. We have, however, formulated our own little tip: if you type ridiculous letters purporting to be funny to the ST Answers section of a certain magazine, you will be greeted by howls of derision and a graphic display of your card being burnt in a ritual black magic dance. Thank you.

The same fate isn't assured if you write in with not quite standard queries, however – we just print those. Have a look at this selection:

From someone in Glamorgan: "My games crash sometimes. What can I do?"

Suggested answers: stop playing them; learn to live with it; give us a tad more information than that "they crash sometimes."

From anonymous of Suffolk: "I am a beginner at writing and spelling. I would like to know what is the best ones I can get for my sister's children. The ages are 2 5-y-olds, 17 y-old 18-y-old-1 10 y-old."

Suggested answer: sorry, can you repeat that? The best

whats you can get for these oddly-described children? And what does your writing and spelling have to do with it?

From somewhere in West Yorkshire: "The disks don't work. Rikam Ltd of the North of England somewhere returned the 520 STE (which we bought therefrom) without any diagnosis leave alone finding the fault and correcting it. We bought an external drive. The tapes still don't work even on the external DD so are only the disks gone or also the internal DD?"

Suggested answer: no.

From thingummyjig of Derby: "I have caught many a virus and I was wondering where do they come from?"

Suggested answer: well, many viruses originate in certain areas of a city, generally known as the Red (er, yes, I think that's enough – Ed).

And again from West Yorkshire: "What is (define) Bresenham's algorithm? ie how to join two coordinates on a raster screen using only integer maths?"

Suggested answer: Bresenham's algorithm is an – er, mathematical thing, which certain people can understand, and – er, others can't, and which is unfortunately far too technical to go into here. As for the coordinates – have you – er, tried a marker pen at all?

From Mr X of Herts: "How could I learn in *First, Power* and *Hisoft Basic* how to program in them properly? I do not

like or want to read books. Can you recommend a number of ways of learning them and without reading books?"

Suggested answer: the thing is, it's very very difficult to get your head around something complex like a BASIC language without actually reading anything. You could go for the intuitive approach: load the language and randomly type words in the hope that a useable program comes out the end. Or the holistic approach: learn about every other thing possible (without reading, of course) and just sort of absorb how to program from your knowledge of the world. The best approach, though, is called the obvious approach: get a book on programming, open it at page one and start reading.

From a certain person of Berkshire: "I want to expand the RAM to 1 or 2MByte without taking the top off my STE. Please can you give me some ideas on how I can do so."

Suggested answer: about the only thing we could come up with was to: (a) pack up your ST, (b) send it off to a company that installs RAM upgrades with the appropriate cheque, (c) wait, (d) unpack your ST when it arrives. That way you don't have to even think about taking the lid off.

Doubtless there'll be more of these, um, unique questions in the future. Watch this hyperspace... Next issue: people who don't read ST Answers before sending in a question. If one more person asks about problems printing out the pound sign or wiring up a PC monitor he picked up for a tenner, Clive's reputation for sanity goes out the window.

IT'S HAPPENING ALL OVER AGAIN NEXT MONTH

If you ever needed a reason to stand patiently in your newsagent's until Thursday 9 July, next month's issue of *ST FORMAT* is it. Next month we're giving you a very special games programming language on our second Cover Disk, which we're tying in with a bulging games feature telling you all you need to know to write your own games for the ST.

Don't worry if you can't program because there are other ways to make money from games, and you can find out all about them too next issue - you can sell an idea to the publishers, wow them with stunning graphics or get their eardrums buzzing with top notch music. Games publishers are always on the lookout for new people, so next month's issue of *ST FORMAT* could offer you just the opportunity you've been waiting for.

And there's loads more, too. If you're still making do with a TV or you're thinking about getting a new monitor, our roundup of eight

ST monitors should get you excited (and if not, why not?). We're looking at multisync monitors (which can show all three ST resolutions at once) and large A4 screens (massive buggers, ideal for DTP work) as well as the more standard mono and colour monitors.

We've also got some great goodies lined up for our main Cover Disk. A demo of Microdeal's powerful, fully-featured MIDI sequencer *Concerto* is poised to go on (it's reviewed on page 106 this month) and a complete 3D mapping program is also scheduled to make an appearance, along with a step-by-step guide showing you how to map objects around 3D shapes. There'll also be a games element, but we can't tell you much about that yet.

As ever, we've also got all the regulars that make *STF* such a great read - another eight pages of ST Answers tips, more Gamebusters cheats, reviews of all the latest hardware and software, including a detailed examination of

the new FSM-GDOS scaleable font program from Atari and an in-depth look at *Calamus SL* - is this latest version of the professional-level desktop publishing package the world-beater the ST has been waiting for? Then there's more in our series of guides to ST music. It's simply amazing!

We're also looking at the possibility of running a Classified ads section in the magazine. If you're interested in the idea, drop a line to Classy classifieds, *ST FORMAT*, 30 Monmouth Street, Bath, Avon BA1 2BW. Let us know whether you think they'd be a good idea and tell us what regular item you would drop in preference to a Classifieds section.

If you want to keep abreast of all that's happening in the ST world and discover more things you can do with your ST, get down to your newsagent on Thursday 9 July - or better still, use the coupon on this page to make sure you don't miss out. You won't regret it.

GET DOWN TO YOUR NEWSAGENT'S ON THURSDAY 9 JULY

TEN OVERUSED WORDS AND PHRASES IN *STF*

- | | |
|--|--|
| 1. Er... | 7. (Everything Monty Python ever wrote. And quite a bit of Fry and Laurie) |
| 2. Somewhat | 8. Well... |
| 3. <Insert objects here>, eh? Dontcha just love 'em? | 9. ...but in the end it's just another platform game. |
| 4. See page 64 if you missed it | 10. ST |
| 5. Lovely | |
| 6. Crap | |

Can't find *ST FORMAT*?

It's no surprise, but Britain's top ST magazine - the one with *complete* software on a second Disk - regularly sells out, in some places before you even get in the newsagent's door on the official on-sale date.

So, if there isn't a copy on the shelf, ask for *ST FORMAT* by name. There may be more in the back room. If not, check a big

newsagent like John Menzies or WH Smith. If you don't want to subscribe - but see page 64 for some good reasons why you should - fill in the form below and hand it to your newsagent, who'll be delighted to reserve you a copy.

Still no luck? Then call Kate Elston on 0225 442244 and she'll sort it all out!

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